Alberta Legislature

Report
of the Auditor General
on
NovAtel Communications Ltd.

Alberta Legislature

Office of the Auditor General

The Hon. Don R. Getty,
President of the Executive Council

Members of the Legislative Assembly

I have the honour to transmit herewith my Report on NovAtel Communications Ltd. This Report was prepared in response to the request made on May 21, 1992, pursuant to section 17(2) of the Auditor General Act.

Donald D. Salmon
FCA
Auditor General

Edmonton, Alberta
September 25, 1992

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THE PREMIER OF ALBERTA

May 21, 1992

Mr. Donald D. Salmon, FCA
Auditor General of the
Province of Alberta
835, 9925 - 109 Street
EDMONTON, Alberta

Dear Mr. Salmon:

Pursuant to Section 17(2) of the Auditor General Act, as President of the Executive Council, I advise that the Executive Council requests you to perform the following special duty:

1. To review the financial affairs of NovAtel Communications Ltd. and the Province of Alberta with respect to The Alberta Government Telephones Commission's (AGT's) investment in NovAtel Communications Ltd. and report:

   (a) the key events, decisions and any other matters which, in your opinion, are relevant to the investment in NovAtel Communications Ltd., including:

      (i) the acquisition of NOVA's interest in NovAtel in 1989,

      (ii) the main reasons for the error contained in the TELUS prospectus dated September 10, 1990, and

      (iii) the strategic business decisions made with respect to NovAtel before and after the privatization of AGT;

   (b) the nature of the losses incurred by the province including the main reasons for the losses incurred by NovAtel;

   (c) whether, in your opinion, accounting and management control systems that could have reasonably anticipated and/or prevented such losses were not in existence, were inadequate or had not been complied with.

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Legislature Building, Edmonton, Alberta, Canada T5K 2B7 Telephone (403) 427-2251 Fax (403) 427-1349

In conducting your review, please consider any relevant reports and studies pertaining to the above matters.

2. To report the effect of NovAtel Communications Ltd. on the province's financial position.

3. To present a report which will be made public.

Yours truly,

Don R. Getty

Don R. Getty
President of the
Executive Council

Previous activity

Auditor General as auditor of NovAtel

Under the Auditor General Act, the Auditor General is the auditor of every government entity, including every Provincial agency. Therefore, the Auditor General has always been the auditor of the AGT Commission. With the privatization of the telecommunication operations of the Commission through TELUS, the AGT Commission continues as a Provincial agency with a different purpose, and I am, by statute, still its auditor.

I was not the auditor of NovAtel while it was operated jointly by the AGT Commission and NOVA Corporation.

In January 1989, NovAtel became a wholly-owned subsidiary of the AGT Commission when the Commission acquired NOVA's share of NovAtel. I became the auditor of NovAtel at that time.

During the latter part of 1990, NovAtel was owned by TELUS Corporation and I was not the Company's auditor.

I became NovAtel's auditor again following the AGT Commission's reacquisition of the Company from TELUS effective December 31, 1990.

I remained auditor of NovAtel until the Company was sold in May 1992.

Auditor General's involvement with the prospectus

My involvement with the TELUS prospectus was the same as for any auditor who consents to the inclusion of an auditor's report on previously audited financial statements in such a document. Such involvement is described fully in the Handbook of the Canadian Institute of Chartered Accountants.

I was not involved with the forecast figures in the prospectus and expressed no opinion on them. Other auditors were required to do this. The forecast is explained more fully in section 6 of this report.

Before accepting the special duty regarding NovAtel under section 17(2) of the Auditor General Act, I considered carefully whether it was proper to do so. The conclusion I reached was that I could proceed, and in fact was required to do so under the mandate of the Auditor General Act.

Objectivity

In preparing this report on NovAtel, my staff and I have been, to the best of our abilities, fair minded and impartial. I have used the same professional judgement in arriving at the conclusions in this report as I use in preparing all of my reports to the Legislative Assembly.

The announcement of the divestiture and the request that I perform a special duty caused a flood of media commentary. NovAtel dominated question period in the Legislature until the Assembly adjourned on July 2, 1992.

During this period, my ability to perform an investigation of NovAtel's losses was questioned publicly. It was suggested that my involvement with NovAtel as auditor created a conflict of interest, and meant that I could not be objective. Also, it was suggested that two management letters were not issued appropriately by my Office. A formal complaint was also made to the Institute of Chartered Accountants of Alberta.

Upon completion of a preliminary investigation into the complaint, the Institute of Chartered Accountants of Alberta stated publicly on August 21, 1992:

"Upon completion of a preliminary investigation, pursuant to the Chartered Accountants Act, into a complaint against D.D. Salmon, FCA, Auditor General (AG), Province of Alberta, the Institute of Chartered Accountants of Alberta's Professional Conduct Committee has ruled that Mr. Salmon has not breached the Institute's Rules of Professional Conduct and has 'directed that no further action be taken against' him."

Copies of the following documents are included in appendix E of this report:

1. Complaint to the Institute of Chartered Accountants of Alberta dated June 4, 1992.

2. Press release issued by the Institute of Chartered Accountants of Alberta dated August 21, 1992, which states that the complaint was unfounded.

3. Management letters issued following the 1989 and 1990 audits of NovAtel.

Introduction

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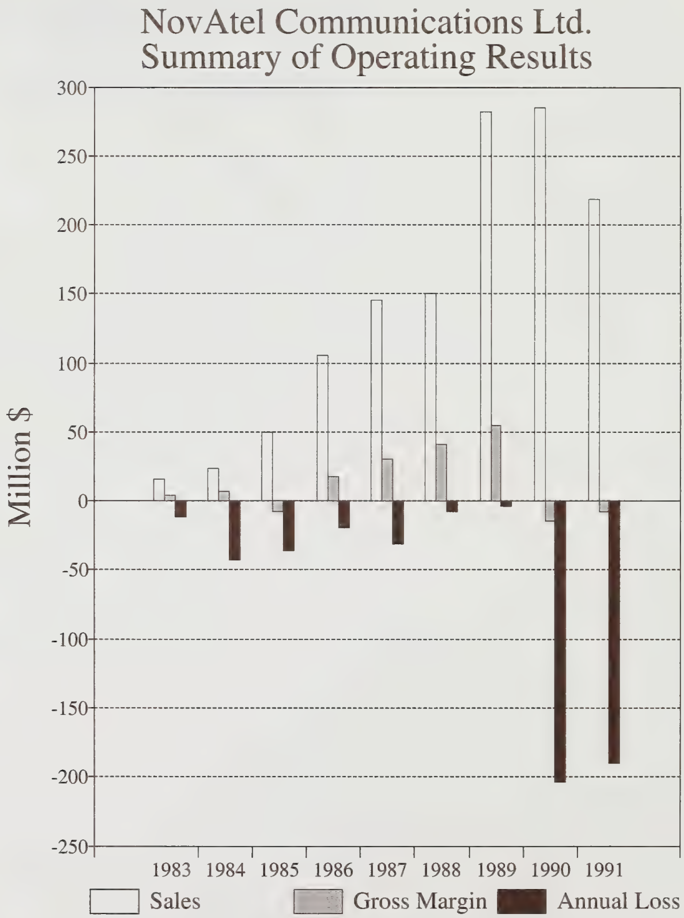
What this report is about

This report deals with what I consider to be the key events, decisions and other matters pertaining to NovAtel Communications Ltd. To set the stage for an understanding of NovAtel's cost to the Province, the following chart is provided to illustrate the Company's operating results:



Guidance for the reader

Appendices B and C contain a description of the cellular industry and NovAtel's businesses. Some readers may wish to review this information prior to reading the individual sections of this report. At the back of this report is a reference section providing details of the many entities, persons and reporting relationships referred to in this report. My summary, overall conclusion and recommendations are contained in section 3.

Approach, focus and access to information

This assignment required that I sift through the mass of information concerning NovAtel and extract that which was relevant to the key events and decisions in NovAtel's history.

I have relied on documentary evidence and interviews with various individuals involved with NovAtel and the surrounding events. Those interviewed were selected from the following:

- members of the Executive Council (Cabinet)
- senior government officials,
- the managements of NovAtel, AGT and NOVA, some of whom were also on the NovAtel Board,
- AGT Commission members, some of whom were also on the NovAtel Board,
- TELUS Board members,
- members of the NovAtel Management Committee, and
- underwriters, lawyers, auditors and financial advisors.

In doing this review, I was assisted by senior management and staff of my Office. I also consulted with a number of people who had specialized knowledge of the cellular industry.

I received access to all the information I required and obtained full cooperation from every person that was interviewed.

A brief history of NovAtel

What follows in this section is an overview of NovAtel's activities from 1983 to 1992. The purpose of this overview is to provide a perspective which will enable the reader to better understand the issues that I have identified, examined and reported upon in other sections of this report. To further assist the reader in understanding the sequence of events, I have included a chronology of key events in appendix A of this report.

1983-1988

The NovAtel story started in 1983 when AGT and NOVA created a joint venture to advance work on cellular communications.

From 1983 until 1988, NovAtel continued with the development, manufacturing and marketing of cellular systems and subscriber equipment. The systems equipment business was successful, but the subscriber equipment business was not, due mainly to product development and manufacturing deficiencies. In this period, the Company had losses totalling $148.7 million.

In order to support its expansion plans, NovAtel was particularly interested in the U.S. market. The U.S. market for cellular communications is regulated by the U.S. Federal Communications Commission (FCC).

In order to issue licenses to cellular systems operators, the FCC divided the United States into Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs). As there were many qualified applicants, the FCC decided to use a lottery process to award the majority of licenses.

The lottery process for MSA licenses was completed in 1987. Having issued the MSA licenses, the FCC started the process for issuing RSA licenses. Thousands of applications were received: over 99,000 applications for MSA licenses and about 278,000 for RSA licenses.

Each application to the FCC had to include a business plan and evidence of financial backing. Early in the MSA lottery, the major manufacturers of cellular equipment began to provide financial commitments to applicants to ensure that they could sell their equipment to lottery winners. NovAtel decided that it was necessary to provide similar financing packages if it was to compete for cellular business. In 1988, the Company issued approximately 400 commitment letters to RSA applicants. Of the applicants backed by NovAtel, 132 were awarded licenses.

In late 1988, NOVA decided to sell its 50% interest in NovAtel. NOVA was reducing the extent of its diversification, and was not satisfied with NovAtel's slow progress toward profitability. The AGT Commission received advice from external consultants and AGT and NovAtel management which can be summarized as follows:

- AGT management was of the opinion that the AGT Commission should sell its interest in NovAtel.

- External advisors identified a number of fundamental problems with NovAtel's operations, and supported the view that the Company needed a strategic partner to overcome those problems.
- NovAtel's Chairman wanted a strategic partner and believed that this could best be achieved following AGT's acquisition of NOVA's interest.

The consultants and AGT management stressed the uncertainty and high-risk of the cellular business.

1989

The AGT Commission decided to acquire 100% of NovAtel and in January 1989 purchased NOVA's share for $42.5 million. At the time, it was recognized that because of the risks involved, a strong strategic partner was required for NovAtel. Such a partner could provide research, manufacturing and marketing expertise and share in the risks.

In February 1989, the FCC expressed concern about NovAtel's and AGT's ability to provide the funds committed to license applicants. NovAtel estimated that its systems financing commitments amounted to U.S. $340 million. To satisfy the FCC's concern, in August 1989 the Province authorized the guarantee through AGT of bank loans by NovAtel of up to that amount.

During 1989, a number of significant events were in progress. The Chairman of NovAtel was negotiating bank financing arrangements to reduce the exposure of NovAtel, AGT and the Province on NovAtel's financing commitments. The AGT Commission was searching for a strategic partner for NovAtel and began negotiating with Robert Bosch GmbH. The government was also considering the privatization of AGT and its subsidiaries.

Against this background, NovAtel continued to expand its operations.

1990

During 1990, NovAtel's workforce expanded by over 50%, from 1,200 to nearly 1,900. The Cimplex manufacturing plant was built in Calgary, the Lethbridge plant was expanded, and loans receivable increased from $11 million to $174 million. NovAtel started to issue loans to U.S. based companies engaged in acquiring cellular licenses from the original lottery winners. These loans were not for the purchase of NovAtel equipment, but rather to fund license acquisitions. Instead of small loans to many operating companies, NovAtel provided some large loans to a small number of companies.

NovAtel's cellular systems business continued to be successful, but the subscriber business suffered further setbacks. Quality problems

continued, leading to losses from warranties and inventory obsolescence. The Company could not meet new product introduction dates, and therefore had difficulty competing with other manufacturers. NovAtel also decided to enter the highly competitive and price sensitive retail market. This led to much lower prices and a shrinking market share.

NovAtel failed in its attempt to secure external financing for systems sales, despite prolonged negotiations with U.S. and Canadian banks. This left the entire burden of guaranteeing NovAtel's loans on AGT and the Province.

By March 1990, Bosch and the AGT Commission negotiators had reached agreement on most issues to bring in Bosch as a strategic partner in NovAtel. The main outstanding matters were Bosch's requirement to hold a majority interest and to have control over significant NovAtel Board decisions. Finalization of an agreement with Bosch took place in July 1990, at which time the Company began a detailed review of NovAtel's business operations as a precondition to closing the agreement later in the year.

The privatization of AGT, with the new name TELUS, was proceeding smoothly during 1990. Those involved with the preparation and verification of the prospectus for the sale of TELUS shares carried out their assignments. The underwriters of the share sale conducted enquiries to establish that those involved had exercised appropriate care in associating themselves with the prospectus.

Although not legally required, a forecast of TELUS earnings was included in the prospectus. This forecast included an amount of $16.9 million as the expected NovAtel profit for the last six months of 1990. This represented about 17% of the total consolidated TELUS income forecast.

It was well known by all concerned that NovAtel had a poor record when it came to forecasting results. The Company did not have a proper forecasting system, and an overly optimistic view was usually taken of planned manufacturing cost reductions and the time required to overcome quality and production problems.

AGT management and the underwriters were sceptical of the six month income forecast by NovAtel management. During June of 1990, several meetings were held to study the forecast resulting in NovAtel's original forecast being reduced to $16.9 million. After assurances were given by NovAtel's management, Board and auditors, the forecast was included in the preliminary prospectus filed early in August 1990.

As a result of a shortfall in sales in July and August 1990, NovAtel management revised parts of its forecast, but not the projected profit of $16.9 million for the six months. This profit forecast was included in the final prospectus of September 10, 1990.

On September 18, eight days after signing the prospectus, the Chairman of NovAtel informed TELUS management that NovAtel would not achieve its income forecast of $16.9 million. In fact, it expected to lose about $4.1 million for the period, a swing of $21 million.

Various underwriters and legal counsel were immediately informed of the forecast problem and a move was made to find a solution. The underwriters concluded that if the share offering was to proceed on schedule, the government would have to restore the integrity of the original prospectus.

The government promised to indemnify TELUS for the NovAtel income shortfall, and to buy NovAtel from TELUS under certain conditions, including payment of a $50 million premium, if the prospective Bosch agreement did not proceed. An amended prospectus was issued on September 23, 1990. The share sale proceeded and became the largest offering of its type in Canadian history.

The government, through the Minister of Technology, Research and Telecommunications, instructed the TELUS Board to determine the reasons for the forecast error in the prospectus and to recommend action. Price Waterhouse was retained by TELUS and reported its findings and recommendations in late November 1990. As a result, NovAtel's top three executives were dismissed by TELUS and the auditors of NovAtel were replaced.

On November 29, 1990, Bosch withdrew from its agreement to buy half of NovAtel.

On December 31, 1990, TELUS exercised its right to have the Province repurchase NovAtel.

1991

Immediately after reacquiring NovAtel, the government put in place a Management Committee to direct the operations of the Company. TELUS provided personnel and resources under a Management Agreement with the Province. The Management Committee was charged with determining the state of NovAtel's finances and operations, taking necessary corrective action and continuing to operate the Company until a method for disposing of the Company was determined.

In March 1991, S.G. Warburg & Co. Ltd., who had worked on the arrangement with Bosch, was retained to find a buyer for the Company. It found considerably less world-wide interest in NovAtel than had existed in 1989.

In March 1991, the government announced that NovAtel had incurred a loss of $203.9 million in 1990.

The Management Committee, supported by management personnel on loan from TELUS, began restructuring and reorganizing NovAtel. Staffing was reduced and qualified senior managers were recruited. It was decided not to open the newly completed Cimplex plant in Calgary. Studies were commissioned to evaluate NovAtel's technology, production and marketing skills and to assess the Company's management quality.

By August 1991, Warburg's efforts had resulted in two offers to purchase NovAtel. Northern Telecom's offer for the systems business was not immediately considered, because an offer had been received to purchase the entire Company, except for the loans. The offer was from Horst Pudwill, a Hong Kong based businessman.

Negotiations with Mr. Pudwill continued throughout the rest of 1991, but then ceased due to his difficulties in obtaining financing.

Despite the resizing of the Company, losses continued in 1991 and were made worse by employee severance costs and provisions for loan losses. NovAtel's loss for the year ended December 31, 1991 was $190.4 million.

1992

In January 1992, Northern Telecom reiterated its earlier offer for NovAtel's systems business. Mr. Pudwill also returned, this time interested only in the subscriber business. Negotiations with both parties continued, while the Management Committee also considered the costs and risks associated with shutting down all or part of the Company.

By late April 1992, the Management Committee had agreements with Northern Telecom and Mr. Pudwill that it recommended to the government. The planned divestiture would see Northern Telecom acquire the systems assets and business of NovAtel, the Province retain the portfolio of loans, land and buildings, certain other assets and the related bank liabilities. Telexel would then buy the shares of NovAtel, effectively acquiring the subscriber business.

The government agreed to the terms negotiated by the Management Committee and on May 21, 1992, the sales were announced and the disclosure was made that NovAtel's cost to the Province was $566 million. My assessment of NovAtel's effect on the Province's financial position is detailed in section 11 of this report.

Summary, Overall Conclusion and Recommendations

Summary

NovAtel was a Company with some early successes in a start-up industry. It had an entrepreneurial management who focused on technology and had ambitions to establish the Company as a recognized player in an international market. That market was dominated by multi-national companies with huge resources. However, the Company lacked strategic direction, adequate budgeting and sound management information systems. These deficiencies indicate that the Company was poorly managed.

NovAtel had a profitable systems equipment business but consistently made significant losses in the highly competitive subscriber equipment business. NovAtel as a whole incurred losses every year.

In 1988 and 1989, management's ambitions to enlarge the Company, perhaps born of a conviction that high volume was essential for profitability, began to have an impact. The departure of NOVA removed a restraining influence on NovAtel's operations, which together with the perception that funds were accessible, encouraged expansion.

During this period, decisions were taken in the subscriber business to expand in Europe, acquire the remaining 49% of Carcom, expand the plant in Lethbridge, build the Cimplex plant in Calgary, devote more money to research and development, and build up the workforce.

In order to increase its systems sales, NovAtel had adopted a strategy of providing loans to its customers. In late 1989, it modified this strategy whereby in addition to providing funds for the purchase of systems equipment, it provided funds for the acquisition of licenses. The decision to loan money in large amounts to companies acquiring licenses from lottery winners exposed NovAtel to the risk of significant losses.

The drive to achieve an increased share of the subscriber equipment market was severely hampered by the following problems:

- the failure to develop new products on schedule, and
- poor product quality which led to excessive sales returns, high warranty costs and inventory obsolescence.

In an attempt to recover market share, and faced with a reputation for poor quality, NovAtel dropped its selling prices in a market that was already highly price-competitive. Since NovAtel was unable to

reduce its production costs, the reduced selling prices resulted in lower gross profit margins or even negative margins.

The lack of a disciplined budgeting process, the poor quality of the management information systems, and a senior management style which tended to dictate the results wanted rather than assess what was achievable, resulted in a failure to recognize the magnitude of the problem which had been created by the end of 1989.

In 1990, unwarranted optimism dominated the thinking of NovAtel management in the preparation of the NovAtel forecast. The view that substantial shortfalls from budgeted profits in July and August would be made up through increased sales in the balance of the year was wishful thinking.

The extent to which management was divorced from reality was finally revealed through the course of the 1990 audit. The audit revealed the need for increased warranty, obsolescence, and bad debt provisions. Although a portion of the loss for that year was attributable to loans supporting license acquisitions in the systems business, the major portion of the loss was attributable to the subscriber business. Indeed it was the subscriber business that pulled NovAtel down, not the systems business.

After 1990, the newly established Management Committee incurred significant costs in downsizing the Company. NovAtel continued to experience difficulties in its subscriber business due to low selling prices, poor quality, and delayed new products. The continuing losses in NovAtel's subscriber business demonstrated that this division of the Company had little value as was reflected in the divestiture arrangements.

Overall conclusion

In the report, I discuss what I consider to be the key issues that explain the losses of NovAtel. On each issue, I have presented the facts, analyzed the evidence, and formed my conclusion.

I believe the main strategic errors that contributed to the NovAtel losses are as follows:

- AGT's decision to purchase NOVA's share of NovAtel,
- AGT's failure to conclude an agreement with Bosch for the sale of an interest in NovAtel,

- NovAtel's decision to compete head-on against multinational companies in the subscriber equipment business, and

- NovAtel's decision to make some very large loans so that potential customers could purchase MSA and RSA licenses.

A board of directors must understand the business it is directing. It must have the mix of skills and experience necessary to appraise performance and set direction. Directors need to be dedicated, alert, and energetic. Success is not guaranteed even when a board of directors has these qualities. However, without these qualities, a board makes poor decisions which can result in the rapid loss of a great deal of money.

NovAtel's losses were made because the majority of the members of the NovAtel Board and the AGT Commission, either did not recognize the risks Novatel was running, or took no effective action to limit the risks. The members were not active participants in decision making, rather they were led by NovAtel's Chairman, and to a lesser extent by NovAtel's President.

The accountability of the AGT Commission and NovAtel to the Province was similar to that of many Provincial agencies. The government appoints autonomous boards to manage the operations of the agencies. However, there are some significant deficiencies in the process used to monitor the activities of such boards. The NovAtel losses illustrate what can happen when deficiencies exist in an accountability process.

Recommendations

To help prevent future loss of public funds, I have the following recommendations:

1. The Province should consider using the expertise of the Public Service Commissioner to short-list suitably qualified candidates for appointments to the boards of all Provincial agencies and Crown-controlled organizations. I recommend that the primary criterion for selection of candidates be proven relevant expertise.

2. All Provincial agencies and Crown-controlled organizations, including subsidiaries, should be required to prepare annual budgets in the form of a projected balance sheet, income statement and statement of cash flows. I am not suggesting that these budgets receive legislative approval. I am recommending that the Public Accounts of Alberta include these budgets and that they be used as a basis for comparison with actual results.

3. The Public Accounts of Alberta should include the financial statements of all Provincial agencies and Crown-controlled organizations, and their subsidiaries.

4. The Public Accounts Committee should consider the reasons for actual results being significantly worse than budgeted results as identified in the Public Accounts of Alberta.

5. The definition of a Crown-controlled organization should be widened to include a 50% interest in, or equal control of, an organization. This change would extend the application of my previous recommendations to the use of public funds in joint ventures.

Some people may feel that I should have made a series of recommendations to improve the control systems and accountability of Provincial agencies. I have no desire to create a new bureaucracy. I would prefer to see existing mechanisms used to better advantage. If my five recommendations are implemented, in time significant improvements in control systems and accountability will take place. To have competent people publicly defining what they propose to do, and accounting for their use of public funds, is the essence of an effective accountability mechanism.

Acquisition of NOVA Corporation's Interest in NovAtel

Key events

On January 1, 1983, NovAtel Communications Ltd. commenced operations as a joint venture between The Alberta Government Telephones Commission and NOVA.

In August of 1988, NOVA informed the AGT Commission of its intent to sell its 50% share of NovAtel.

In October of 1988, the AGT Commission decided to acquire NOVA's entire interest in NovAtel.

On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel for $42.5 million.

Risks

It is reasonable to conclude that any analysis as to what to do about NOVA's intentions to sell its 50% share in NovAtel should have considered the risks that the AGT Commission faced.

By this point in time, the business risks relating to the AGT Commission's investment in NovAtel were high. AGT's executive management committee minutes of October 24, 1988 record the situation as follows:

"NovAtel was in a high risk business, which required steady infusions of capital to remain competitive in a consumer-oriented product market, dominated by multi-nationals with deep pockets and multiple product lines, and neither partner [being AGT and NOVA] added management expertise to this manufacturing business."

Options

There were three options available to the AGT Commission as a result of the terms of the joint venture agreement with NOVA:

Option 1

Join with NOVA and sell 100% of NovAtel.

Option 2

Join with NOVA to find a buyer for NOVA's 50% share. In this case, under the terms of a so-called shotgun clause in the joint venture agreement, the AGT Commission could be forced either to

accept a partner found by NOVA, or to acquire NOVA's interest on the same terms negotiated with that potential purchaser.

Option 3

Acquire NOVA's 50% interest.

Advice provided

As would be expected, the AGT Commission received advice from several sources on what to do.

AGT management, based on a report prepared by Corporate Planning, believed that the AGT Commission had to have a clear strategic reason to justify continued participation in NovAtel. The report stated, in part, the following:

"We have been unable to identify compelling strategic reasons why AGT should remain involved with NovAtel apart from a desire for acceptable return on investment. Such returns are highly unlikely."

"Assuming no compelling strategic interests, the preferred option for AGT should be to work with NOVA to divest of the total interests in NovAtel. This should be done in such a manner as to optimize: the financial returns to the shareholders; the public perception of the roles of NOVA, AGT and the Government of Alberta in the operation and divestiture of NovAtel; the security of NovAtel jobs within Alberta; the long-term viability of NovAtel."

The report's second option was to find a partner to assume NOVA's interest, and the third and least preferred option was for AGT to take over 100% of NovAtel.

Burns Fry Ltd, who had been commissioned by NOVA to provide an assessment of the cellular radio industry and to provide an evaluation of NovAtel, issued a report dated June 1988 which was made available to the AGT Commission. The conclusion reached by Burns Fry was:

"We believe that the principals of NovAtel Communications Ltd. should give strong consideration to either:

(a) a joint venture with a larger competitor; or
(b) a targeted divestiture.

Any action plan must emphasize the principals' desire to maximize financial return while minimizing job losses in Alberta."

The Burns Fry report also stated that the value of NovAtel would be less in 1992 than it was in 1988. Also, the report indicated that the window of opportunity to sell the Company was somewhere in the vicinity of three to six months from the date that the report was completed.

Arthur D. Little, Inc., who were hired by the AGT Commission to assess the value of NovAtel, issued a report dated November 1988.

The report identified a series of weaknesses and strengths concerning the operations of NovAtel. In arriving at a valuation for NovAtel, the report assumed that a number of the weaknesses identified either had been, or would be, overcome. Among the most significant weaknesses were the following:

- NovAtel's subscriber equipment was not competitive since the cost of production needed to be halved within two to three years, and competitors were one to two years ahead of NovAtel in product development;

- NovAtel's quality problems were known in the marketplace, and the Company needed to be more effective in marketing and distribution; and

- NovAtel lacked a business plan, and current financial reports did not indicate that the Company was on the road to profitability.

Arthur D. Little, Inc. assessed the window of opportunity to divest as being one to two years.

The views of NovAtel's Chairman, as recorded by the Commission's corporate secretary at a Commission meeting on October 26, 1988, were as follows:

- NovAtel required a strategic partner;

- If the government wanted to sell its interest, it should not do so at the same time as NOVA since this would be seen as a panic sale; and

- More attractive terms could be obtained from a potential partner if there was only one owner to deal with. Therefore, if the government wished to sell all, or part of, its interest in NovAtel it should do so only after it acquired 100% of NovAtel.

In summary:

- AGT management was of the opinion that the Commission should sell its interest in NovAtel.
- External advisors identified a number of fundamental problems with NovAtel's operations, and supported the view that the Company needed a strategic partner to overcome those problems.
- NovAtel's Chairman wanted a strategic partner and believed that this could best be achieved following AGT's acquisition of NOVA's interest.

Government view

The Chairman of the AGT Commission has informed me that he viewed the buyout as a matter to be decided by the AGT Commission. Under the Telecommunications Act, such a matter was within the authority of the Commission. As a result, the buyout of NOVA was not reviewed or approved by the Minister of Technology, Research and Telecommunications. However, the Chairman of the AGT Commission has told me that he kept the Minister informed of the progress of negotiations.

Decision made

On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel for $42.5 million.

The final decision to acquire NOVA's 50% interest in NovAtel was made at a meeting of the AGT Commission on October 26, 1988. Based on the minutes of that meeting, I have concluded the following regarding the three options available to AGT under the terms of the joint venture agreement with NOVA:

Option 1

The AGT Commission did not join with NOVA to sell 100% of NovAtel because it was believed that to do so would create the impression of panic resulting in a reduced selling price.

Option 2

The AGT Commission did not join with NOVA to find a buyer for NOVA's 50% share because it was believed that NOVA's desire to sell quickly would make it difficult to find the right partner and to negotiate the terms of sale that the AGT Commission wished. As a result of the shotgun clause in the joint venture agreement, AGT

might have been required to purchase NOVA's interest at a premium to avoid the sale of NOVA's interest to an unwanted partner.

Option 3

The AGT Commission decided to acquire NOVA's 50% interest in NovAtel. Presumably, the members of the AGT Commission were persuaded by the views of NovAtel's Chairman who believed that a strategic partner could best be obtained following the acquisition of NOVA's interest.

Conclusion

I believe that the purchase of NOVA's share by the AGT Commission is a key event in the explanation of the NovAtel loss.

Based on the evidence examined, the AGT Commission chose to acquire NOVA's 50% interest in NovAtel knowing that the Company was a high business risk. To purchase an additional 50% share of that risk in order to be in a better position to find a new partner was unwise.

If the AGT Commission had cooperated with NOVA in finding a buyer for NOVA's interest in NovAtel, there would have been no increase in the Commission's exposure. If a new partner could not have been found, NOVA would still have been responsible for 50% of NovAtel's losses. In such circumstances NOVA would probably have insisted that swift action be taken to limit losses and liabilities.

I believe that given the risks involved, only a company with appropriate management expertise and related experience would have been interested in acquiring an interest in NovAtel. Such a company had the best prospect of producing profits from NovAtel and was the sort of partner that the AGT Commission needed. However, such a company would probably have required a controlling interest, therefore, NOVA's share of NovAtel could not have been sold without the Commission's cooperation.

Search for a Partner, especially Robert Bosch GmbH

PAGE

Key events

On June 26, 1989, the NovAtel Board was made aware that Bosch was clearly looking for control of NovAtel, was considering making Calgary the centre for its worldwide cellular business, and intended to finalize the acquisition by the end of 1989.

On July 24, 1990, a sale agreement was reached between Bosch and the AGT Commission. The proposed closing date was October 1, 1990.

On September 24, 1990, Bosch wrote to the President of AGT expressing concern that certain terms and conditions contemplated in the sale agreement could not be performed or complied with.

On November 29, 1990, Bosch advised TELUS Corporation that it would not be proceeding with the purchase of an interest in NovAtel and all negotiations would be terminated.

Objectives and risks

The decision to acquire NOVA Corporation's interest in NovAtel was made on the basis that it would maximize the AGT Commission's ability to secure an appropriate strategic partner. It had been acknowledged in October 1988 that AGT lacked the expertise to manage NovAtel. As noted in the previous section, AGT's executive management committee minutes of October 24, 1988, recorded the situation as follows:

"NovAtel was in a high-risk business, which required steady infusions of capital to remain competitive in a consumer-oriented product market, dominated by multi-nationals with deep pockets and multiple product lines, and neither partner [being AGT and NOVA] added management expertise to this manufacturing business."

In a report dated March 26, 1990, the Vice President, Corporate Planning restated the position of AGT executive management. The report said that AGT was not able to provide the leadership required by NovAtel, a Company operating in an industry marked by rapid technological, manufacturing and market advances.

In other words, AGT could not provide NovAtel with the leadership thought necessary. The AGT Commission had decided that the necessary leadership should be provided by a strategic partner. The search for such a partner was thus an urgent matter, since in the absence of the partner the necessary leadership was missing.

Negotiating process

Although a number of companies showed interest in NovAtel, it was evident from the outset of the search for a strategic partner that Bosch had the most to offer. In April 1989, the President of NovAtel expressed his view that Bosch had more to offer in the area of radio frequency technology than most other companies.

In early 1989, the Chairman of the AGT Commission established a team to negotiate the terms for the sale of an interest in NovAtel. The team consisted of the President of AGT, the President of NovAtel, the Chairman of NovAtel and the Vice President, Corporate Planning of AGT. Reports on the status of sale negotiations were provided to both the NovAtel Board and the AGT Commission by members of the negotiating team.

On June 26, 1989, the President of NovAtel, the President of AGT, and the Chairman of NovAtel reported to the NovAtel Board on a visit to Bosch. They informed the Board that:

- Bosch would make a good partner,

- Bosch wanted to acquire a controlling position within two years of acquiring a minority position,

- Bosch was considering making Calgary the centre for its worldwide cellular business, and

- Bosch intended to finalize the acquisition by the end of 1989 provided a suitable arrangement could be negotiated with NovAtel and AGT.

At the same meeting, the Chairman of NovAtel advised that given the national concern that was developing about foreign investment, the impact of the sale of a control position must be examined. The President of NovAtel noted that a sale of a control interest of NovAtel would operationally make it a division of a very large corporation whose control and direction would come from Germany. He also noted however, that a sale would bring the benefits of complementary technology, access to new markets through Bosch's European network, and financial support.

On July 19, 1989, the AGT Commission established a sub-committee of the Commission to advise the negotiating team.

In September 1989, the AGT Commission retained S.G. Warburg & Co. Ltd. to act as a financial advisor. Warburg delivered a report to the Commission in December 1989. The report presented NovAtel

in a very positive light, but reinforced the fact that the value of NovAtel and the AGT Commission's ability to sell all or a portion of NovAtel was highly predicated on NovAtel's ability to achieve its forecast results for 1990.

The Warburg report noted: "...if AGT waits [to sell an interest in NovAtel] and the results for 1990 show a recurrence of 1989's shortfall, NovAtel's value will clearly be impaired - probably below the levels we believe to be achievable at present."

Throughout the last few months of 1989 and into January 1990, members of the negotiating team attended several meetings with Bosch. Further, Bosch completed its examination of NovAtel's business.

In February 1990, initial draft agreements between Bosch and AGT were prepared. The purpose of these draft agreements was to encourage both parties to move rapidly to a discussion of specific terms.

At a meeting on March 17, 1990, AGT's negotiating team met with Bosch representatives and reached agreement on most issues. The main outstanding matters were Bosch's requirement to be able to secure a majority interest and to have control over significant Board decisions.

On March 22, 1990, at a NovAtel Board of Directors meeting, the Chairman and the President reiterated the views they had first expressed on June 26, 1989, by clearly indicating that they were not in favour of giving Bosch control. The Chairman commented that it would be of concern to him if NovAtel were operated as a branch plant of a foreign multinational. He felt it imperative that Bosch's desire for management control be fully identified and analyzed before final arrangements were agreed to. The President advised that being controlled from Europe would be demoralizing; the corporation would change from being a Canadian company to being a Canadian subsidiary of a German company; and that if control were given up he predicted that employees' emotional commitment would be eroded. The President of AGT and the Vice President, Corporate Planning of AGT, who were members of the NovAtel Board, indicated support for the sale of a controlling interest to Bosch.

The AGT Commission's financial advisors strongly recommended that the Commission accept a deal whereby Bosch would be able to purchase a controlling interest. In a document dated March 28, 1990, Warburg advised the Commission that passive involvement on the part of the strategic partner would defeat one of

the principal purposes of the transaction. For a business making a loss, control becomes essential as it would be difficult for a non-controlling partner to ensure the adoption of corrective measures. Further, such joint ventures are only effective if one partner clearly takes the lead.

Warburg's conclusion was that the consequences of not reaching an agreement with Bosch would be an immediate effect on AGT's cash flow and that AGT would not likely find any other strategic partner that would offer such an attractive combination of qualities. There was a risk that NovAtel would continue to extend its record of missed projections, thereby undermining the credibility of any valuation which relies upon future profitability. Bosch was prepared to meet AGT's non-financial objectives of keeping NovAtel as a separate entity and Calgary the centre of Bosch's worldwide cellular business.

As a result of the different positions taken by the members of the negotiating team at the March 22, 1990 meeting, a meeting of the team's advisory group was held on April 5, 1990. No minutes were taken at this meeting. However, through my interviews I have learned that the meeting was contentious. I learned that the Chairman and the President of NovAtel both expressed views which indicated that not only were they against selling a control position to Bosch, but in fact would prefer not to sell any portion of NovAtel. The advisory group and the team reached agreement on a compromise proposal regarding control which was reflected in the agreement subsequently negotiated with Bosch.

On July 24, 1990, an agreement was finally reached between Bosch and AGT. The agreement for the acquisition of 50% of the shares of NovAtel included the following:

- a closing date of October 1, 1990,

- a purchase price of 50% of the net asset value of NovAtel plus $50 million,

- equal representation on the Board from Bosch and AGT - in the event of deadlock, most matters would be resolved in favour of Bosch,

- each shareholder could provide additional share capital and failure to match the capital injections of the other would lead to a reduced ownership interest,

- representations and warranties by the AGT Commission, including:

    - that no material change in the financial position of NovAtel had occurred between December 31, 1989 and May 31, 1990;

    - that finished goods inventory was of merchantable quality,

    - that all other inventories were reasonably fit for the usual purpose, and

    - that no material change had occurred in the affairs of the business as a whole, financial or otherwise.

On September 24, 1990, Bosch wrote to the President of AGT pointing out that the agreement provided that the purchaser may rescind the agreement in the event that any term or condition was not complied with prior to the time of closing. In the letter, Bosch said:

"Some of the items which cause us concern are as follows:

1. Bosch has not received the Closing Date Consolidated Balance Sheet within the time required.

2. Bosch has received advice that the 1989 Financial Statements may have overstated the net assets by up to $8,000,000.

3. The July and August 1990 financial statements show a material change in the financial position of NovAtel contrary to the representations set out in the Agreement and the conditions contained therein.

4. We have received advice that the distribution network and the supply of production have experienced significant problems resulting in a material change in operations contrary to the representations and conditions set forth in the Agreement.

5. Additional concern is caused by the draft press release [dealing with the matter of a revised prospectus for TELUS] dated September 23, 1990."

The letter went on to suggest that both parties attempt to renegotiate the agreement on terms which reflect the current performance of NovAtel.

As a result, an amending agreement was signed changing the closing date to December 31, 1990, which would allow the terms to be renegotiated.

On November 29, 1990, Bosch advised TELUS that it would not be proceeding with the purchase of a 50% interest in NovAtel and that all negotiations would be terminated.

There was apparently no single factor that caused Bosch to terminate the negotiations. The Vice President, Corporate Development of TELUS and the Assistant Deputy Minister, Department of Technology, Research and Telecommunications met with representatives of Bosch on November 26, 1990. Based on notes taken at the meeting which I have reviewed, Bosch indicated that it did not feel that NovAtel could ever be a viable entity with or without a strategic partner. Bosch's conclusion not to proceed was based on the following main concerns:

- Bosch's interest in NovAtel was based on car telephones for which the demand was diminishing due to technological advances resulting in the advent of portable cellular telephones
- a contract with Ericsson, a major manufacturer in the cellular industry, signed in June 1990, could lead to losses,
- the subscriber side of the business was operating at a negative margin. NovAtel was unable to keep up with the market and by this time was one to two product generations behind the competitors,
- the systems side of the business carried very serious risks,
- quality problems carried a considerable cost and would continue into the next year, and
- staff morale was low and NovAtel's management had limited appropriate experience.

Government view

The Minister of Technology, Research and Telecommunications has informed me that he had no direct involvement in the negotiating process, that he agreed in principle with Bosch acquiring an interest in NovAtel, and that he wished to be informed of the terms of any proposed agreement. On the question of control, he has informed me that he was willing to let Bosch exercise management control with a 50% ownership of NovAtel provided Alberta's interests regarding jobs and technology were safeguarded. The agreement with Bosch was signed on this basis. With respect to providing Bosch with ownership control, he indicated that he would have been willing to enter into such an agreement provided Alberta's interests were safeguarded.

There appears to be a difference of opinion regarding the question of control. The Chairman of the AGT Commission has informed me that in his discussions with the Minister he gained the impression that the Minister would be reluctant to surrender control of NovAtel to Bosch.

Conclusion

The failure to secure a strategic partner shortly after the acquisition of NOVA's interest in NovAtel was, I believe, a significant reason for the magnitude of the losses incurred by NovAtel in 1990 and 1991. Additionally, if a strategic partner had been found by the end of 1989, the Province's share of any losses incurred in 1990 and 1991 would have been less than 50% if control had been given to the new partner.

It was more than two years from when the AGT Commission formally acknowledged that NovAtel required a strategic partner, until negotiations with Bosch were terminated. This length of time was excessive, given the risk that the Commission had as sole owner of NovAtel.

The minutes of several meetings indicate that much debate took place regarding who should have control of NovAtel. This debate appears to have caused delay in securing an agreement. I believe that such delay was unwarranted. The AGT Commission was told as early as 1988 by its advisors that in order to improve NovAtel's performance, control would have to be given up. No potential strategic partner could sensibly take a passive role.

Every month that went by, without the leadership that a partner such as Bosch could provide, increased the risk of losses. Therefore, time was of the essence in the search for a strategic partner. Selling price was very much a secondary issue. Control should not have been an issue, particularly as Bosch appeared willing at a very early stage to preserve jobs in Alberta and make Calgary the centre for its worldwide cellular business.

Error in the TELUS Corporation Prospectus

PAGE

Key events

On July 5, 1990, the Alberta Government Telephones Reorganization Act received royal assent. The Act's purpose was to effect the privatization of AGT's telecommunications business.

On August 7, 1990, the preliminary prospectus was filed with the Alberta Securities Commission.

On September 10, 1990, the final prospectus was approved by the TELUS Board of Directors. On the same date an underwriters final due diligence meeting was held. The meeting was between TELUS and its underwriters to permit the underwriters to make enquiries to assist in establishing that they had exercised appropriate care or diligence in associating themselves with the prospectus.

On September 11, 1990, the final prospectus was filed with the Alberta Securities Commission.

On September 18, 1990, eight days after signing the prospectus, the Chairman of NovAtel informed TELUS management that the NovAtel earnings forecast covering the last six months of 1990 would not be met.

On September 23, 1990, an amended prospectus was filed with the Alberta Securities Commission.

On November 29, 1990, as a result of an investigation into the error in the prospectus, TELUS dismissed NovAtel's top three executives.

Purpose of the prospectus

A prospectus is a document provided by a corporation to potential investors in an issue of securities. It contains information such as a description of the securities to be issued, a description of the corporation's business, names of directors and officers, financial data and other pertinent facts. In short, a prospectus provides potential investors with the information necessary to decide whether to invest in a company.

The TELUS prospectus offered 55% of the common shares held by the Government of Alberta to the public. Following a successful offering, the government would own the remaining 45% of the shares of TELUS. The offering to the public was the means of privatizing the telecommunications business then conducted by the AGT Commission.

NovAtel information in the prospectus

Appendix D of this report contains detailed information extracted from the TELUS prospectus. The following is intended to assist the reader to understand the NovAtel information contained in the prospectus.

The prospectus contained consolidated balance sheets of AGT as at December 31, 1989 and 1988, and consolidated statements of income, retained earnings and changes in financial position for each of the years in the five year period ended December 31, 1989. This financial information was audited. In addition, an unaudited consolidated balance sheet at May 31, 1990, together with unaudited statements of income, retained earnings and changes in financial position for the five months ended May 31, 1990 and 1989, were provided.

The only information specifically concerning NovAtel in the financial statements was contained in notes 8, 13 and 14 of the consolidated financial information referred to above. These notes dealt with AGT's investment in NovAtel, NovAtel's sales financing commitments and their effect on AGT, and a subsequent event referring to the potential sale of 50% of NovAtel.

Included in a description of the business of AGT was a section dealing with the investment in NovAtel. The additional financial information provided in this section was:

- NovAtel's revenues were $282 million in 1989,
- NovAtel had not been profitable on a yearly basis,
- NovAtel's losses were $3.7 and $7.7 million in 1989 and 1988, respectively, and
- NovAtel's net losses for the five months ended May 31, 1990 and 1989, were $13.8 and $5.9 million, respectively.

The section explained the guarantee that would be required of TELUS to facilitate NovAtel's systems business. Further, it described the share purchase agreement, signed on July 24, 1990, with Robert Bosch GmbH for the sale of 50% of NovAtel.

The underwriters suggested that, in order to provide better information to potential investors given the recapitalization of TELUS, a forecast for the remaining period of 1990 should be included in the prospectus. As a result, a forecast consolidated statement of income for TELUS for the six months ended December 31, 1990, together with an auditor's report on this forecast, was included in the prospectus. The net income forecast of $98.1 million contained an item "Equity in income of subsidiary" in

the amount of $16.9 million. This amount was the earnings forecast of NovAtel for the last six months of 1990.

The error

On September 13, 1990, the preliminary operating results for August 1990 became available to NovAtel management. The results showed a loss greatly in excess of that forecast for the month of August in the final prospectus. For example, whereas the projected subscriber equipment sales in the final prospectus were $24.4 million, the actual sales were $11 million.

On September 18, eight days after signing the prospectus, the Chairman of NovAtel informed TELUS management that the NovAtel earnings forecast covering the last six months of 1990 would not be met.

On September 23, 1990, an amended prospectus was filed with the Alberta Securities Commission. In the amended prospectus, the TELUS Board described the reasons for the amendment as follows:

"Recent results of NovAtel, a wholly-owned subsidiary of TELUS, have indicated that NovAtel's earnings for the second half of 1990 are expected to be substantially lower than those contained in the Forecast Consolidated Statement of Income of TELUS for the six month period ending December 31, 1990 set forth in the prospectus. NovAtel experienced a significant decline in expected sales through its United States retail customers in August. This variance was caused primarily by a softening in demand for cellular telephones and delays in delivering new products to customers and in receiving portable cellular telephones from suppliers. In addition, NovAtel encountered delays in verification testing of new systems products and some deliveries of systems and custom products have been deferred into 1991. Delayed certification, which has now been granted, of a new product in the Swiss market also contributed to the August results. Higher write-downs in inventory and accounts receivable caused a further reduction in the earnings forecast for the last half of 1990."

The amended prospectus withdrew the forecast consolidated statement of income for the six months ended December 31, 1990, included in the original prospectus. It was replaced with a forecast consolidated statement of income for the last three months of 1990. This forecast excluded NovAtel.

The original prospectus contained two amounts with respect to NovAtel's 1990 performance:

- $13.8 million unaudited loss for first five months, and
- $16.9 million profit forecast for last six months.

Combining these two amounts with estimated earnings of $0.6 million for June 1990, results in an estimated profit of $3.7 million for 1990.

The results from the audited financial statements of NovAtel for 1990 were announced on March 13, 1991. It was revealed that the Company had incurred a loss of $203.9 million.

Although informed investors realize that a forecast by definition cannot be a precise statement of future events, a difference between forecast and actual results of this magnitude exceeds any reasonable variance and must be explained.

Findings related to the error

The findings relating to the difference between the forecast of NovAtel's results and the actual results for 1990 are set out below.

Findings - NovAtel

NovAtel management had a long history of not being able to accurately forecast earnings. The comparison of budgeted net profit/loss with actual results indicates NovAtel's inability to predict accurately.

Price Waterhouse Report

The following is extracted from a report, dated November 28, 1990, prepared by Price Waterhouse for TELUS Corporation. Price Waterhouse assisted TELUS in a review of the circumstances leading to the amendment to the TELUS prospectus. The report dealt in part with the matter of inadequate forecasting:

"Inadequate Forecasting Process

The following is a summary of key points that indicate an inadequate forecasting process.

"**Lack of accountability**. NovAtel has a history of missing earnings forecasts, yet it appears that few, if any, sanctions have been applied for poor forecasting.

"**Top-down targeting**. We have been told that senior management imposed earnings targets in the forecasting process that clouded the judgement of those involved. Instead of the forecasting process being an independent bottom-up assessment of what was realistic, it became an exercise in meeting targets.

"**Confusion between budgets and forecasts**. Some members of the management team have displayed a lack of understanding of the difference between a budget and a forecast, with the result that forecasts have sometimes reflected desired results rather than a best estimate of likely results.

"**Lack of consultation**. For items below the gross margin line, the corporate controller has tended to forecast on the basis of extrapolation rather than by consulting those in the best position to forecast.

"**Poor coordination and communication**. We have been made aware, by several members of the management team, that the coordination of management and the communication between various functions has been lacking. The result has been that each department has prepared its forecasts in a vacuum, with incomplete understanding of the impact of its forecast on others.

"**Forecasting system not sufficiently developed**. The company's forecasting systems are not sufficiently developed to cope with the impact of a dynamic consumer products business. Although the budget process involves a careful analysis of the impact of projected sales volumes on manufacturing, these impacts are not modelled; as a result, as sales volumes by product change, the impact on costs cannot be readily determined. There is insufficient modelling of the business to permit the kind of 'what-if' analysis necessary to effective forecasting in a changing environment.

"**Forecasting model is incomplete**. The forecasting model consists of an income statement but does not include a balance sheet or statement of changes in financial position. These statements are necessary to ensure, among other things, that the appropriate charges are forecast for depreciation and interest and to determine the effect on working capital items.

"**Lack of audit trail**. In reviewing the company's '5+7', '6+6', and '8+4' forecasts [forecasts completed for the last seven, six and four months of the year respectively], we were unable to obtain a clear audit trail of the assumptions underlying the forecasts. In each case, there were many versions of the forecast output, but the sources and rationale for the assumptions used were, in most cases,

not documented. This is a further indication of the lack of forecasting discipline.

The auditors of the NovAtel forecast, in a letter of July 12, 1990 addressed to the Company's Chairman, indicated that they were experiencing problems in obtaining documentation of the company's forecasting process in performing their work on the forecast to be included in the prospectus.

"**Unwarranted Optimism by Senior Management**. Despite the company's history of missed forecasts, management based its prospectus forecast on a turnaround to profitability precisely over the period the prospectus was being filed.

Management did not give adequate recognition to product introduction delays, even though the company has a record of such delays.

Management ignored the advice of the U.S. subsidiary management of serious problems associated with not meeting delivery commitments.

Management chose to ignore the Warburg report, which suggested that a forecast of profit was unrealistic.

"**Overstated Accounts Receivable and Inventories**. Management chose not to take into account the impact of overstated accounts receivable and inventories in its forecasting."

Recognition of events

An internal audit report dated August 22, 1990 indicated that new product introduction dates had been missed and that unrealistic schedules and budgets were being set.

To indicate the extent of the problems NovAtel was facing in August 1990, I have summarized the points made in an internal memorandum dated August 27, 1990, from the Group Vice President, Subscriber to the President and Chief Operating Officer and the Controller of NovAtel in Calgary:

- unit sales for August were 15,800, as compared to a plan of 32,800, due to a lack of delivery of certain product as promised to customers;

- industry pricing dropped to between 5 and 15% in the latter part of the month;

- several quality issues were noted; and

- of the projected $842,000 "margin enhancement" program for August, only $23,000 was realized; the difference of $819,000 resulted from failure to deliver PTR 825s.

The memorandum concluded by saying, ".....1989 was bad as we had no new products, but we knew we weren't getting any. 1990 is even worse! Every month we are promised product; we commit it and then cannot deliver. So we lose orders, margin and our credibility."

Between August 7, 1990, the filing date of the preliminary prospectus and September 11, 1990, the filing date of the final prospectus, NovAtel management became aware of the following information:

- Based on actual results, the unaudited loss for the month of July 1990, was $5.4 million. The forecast for July, in the preliminary prospectus, was a $1.9 million profit.

- Based on actual results for July, the estimated result for the month of August was a loss of approximately $6 million. However, management decided to change the forecast for August to a loss of only $1.4 million because it lacked confidence in the Company's forecasting system. The forecast for August in the preliminary prospectus was a $2.8 million profit.

- On September 6, 1990, it became known to management that a further provision of $2.4 million was required for bad debts and inventory obsolescence.

Effect of events

Despite the adverse events noted above, and management's knowledge of the requirement to increase expenses in the forecast by $13.5 million, management did not change the $16.9 million profit forecast for the last six months because:

- system sales were increased in the forecast from $77.8 million to $104.9 million, and

- production costs in the forecast were reduced.

Based on the known July 1990 loss and an estimated August 1990 loss of $1.4 million, a profit of $28.4 million would have to be earned in the final four months of the year to meet the forecast.

Set out below is a table for subscriber and system sales which shows:

- the original sales forecast used in arriving at a profit forecast of $16.9 million in the preliminary prospectus filed on August 7, 1990,
- the revised sales forecast used in arriving at a profit forecast of $16.9 million in the final prospectus filed on September 11, 1990, and
- the unaudited total sales for the six month period.

	Preliminary Prospectus	Final Prospectus	Actual
	(thousands of dollars)		
Subscriber Sales:			
July	$ 22,470	$ 14,757	
August	25,235	24,359	
September	29,749	27,930	
October	31,142	35,238	
November	38,945	42,889	
December	23,163	27,362	
	$ 170,704	$ 172,535	$68,982
System Sales:			
July	$ 18,208	$ 8,986	
August	16,921	11,929	
September	12,129	18,000	
October	12,786	20,500	
November	12,095	22,500	
December	5,704	23,000	
	$ 77,843	$ 104,915	$69,540

Findings - AGT

Consideration and approval of NovAtel's forecast

The AGT Commission and management were fully aware of NovAtel's inability to predict accurately. For example, S.G. Warburg & Co. Ltd. stated in a document to the AGT Commission dated March 1990:

"This projection [NovAtel's 1990 business projection, not to be confused with the forecast in the prospectus] must be considered in the light of both NovAtel's consistent record, over several years, of not achieving its performance targets and the disappointing outcome for the month of January (results more than $2 million below budget and negative cash flow of $22.4 million). It remains difficult for a disinterested observer to regard NovAtel's projections for 1990 and beyond with anything other than scepticism, at least until the company has operated profitably for a few consecutive months."

NovAtel management prepared a forecast on June 27, 1990. It was discussed with AGT management on June 29, 1990. The forecast showed a profit for the six months ended December 31, 1990, ranging between $19.6 and $26 million.

The AGT Vice President of Finance subsequently summarized his position at the time, as follows:

"Although I concluded that NovAtel management had a good, rational position for the $26.0 M net income, their recent monthly sales variability and a history of various problems from quality, to supply, to product delays and price erosion made us very uncomfortable with their forecast.

"I concluded that due to NovAtel's track record of increasing sales and improving losses (only $3.7 M in 1989) a forecast that resulted in a breakeven to a small profit for the year was the only comfortable number for TELUS to use."

As a result of AGT management's review of the forecast, it was recommended to NovAtel management that the forecast be amended to reflect a $1 million profit for the year. In other words, the forecast for the six months should be reduced from $26 million to $14.2 million.

NovAtel management reluctantly revised the forecast to show a profit of $16.9 million for the last six months of 1990, giving a projected profit of $3.7 million for the year. This forecast of $16.9 million was approved by the NovAtel Audit Committee, a committee of the NovAtel Board, on July 16, 1990.

Events subsequent to approval of the forecast

Between August 7, 1990, the filing date of the preliminary prospectus and September 11, 1990, the filing date of the final prospectus, two members of AGT senior management, who were members of the Board of Directors of NovAtel became aware of the following information:

- Based on actual results, NovAtel's unaudited loss for the month of July 1990, was $5.4 million. The result forecast for July, in the preliminary prospectus, was a $1.9 million profit.

- Based on actual results for July, NovAtel management had modified the forecast for the month of August to a loss of $1.4 million. The result forecast for August in the preliminary prospectus was a $2.8 million profit.

- NovAtel Carcom Inc., the U.S. sales subsidiary, was experiencing high sales returns.

The AGT Vice President, Finance also became aware, before September 11, 1990, of the loss in July and the projected loss in August.

As the profit forecast of $16.9 million for the last six months was not changed, the AGT Vice President, Finance indicated concern over the fact that all profits were now to be earned in the last four months of the year. NovAtel management indicated that it was still very confident of the current forecast because the problems relating to July were attributable to product changes and some product delays. Management claimed that any shortfall in sales resulting from product delays would be corrected before the year end.

Findings - Underwriters

The underwriters provided guidance as to what information should be disclosed in the prospectus. They conducted a review of the prospectus to assure themselves that there was "full, true and plain disclosure of all material facts relating to the securities offered." RBC Dominion Securities Inc. was the lead underwriter for the share offering. They took the view that since NovAtel was operating in a high risk business which was somewhat different from the rest of TELUS, a review should be done on the NovAtel forecast. This review would be in addition to the normal due diligence review on the entire prospectus. To this end, they attended presentations by NovAtel on June 6 and 29, 1990.

Dominion Securities conducted formal due diligence sessions on July 23, 1990, and September 10, 1990, to ask specific questions of representatives from AGT management, NovAtel management, the

auditors and legal counsel. The following illustrates the nature of the questions asked:

- At the June 29, 1990 meeting and at the July 23, 1990 due diligence session, the underwriters questioned NovAtel management to obtain an understanding of the process used to produce the forecast. They asked what factors could prevent the forecast from being achieved.

- Their due diligence questions of July 23, 1990, asked of the AGT Vice President, Finance:

  "Please review [describe] the work carried out by AGT in reviewing NovAtel's July 1 - December 31, 1990 forecast. Are you comfortable with the forecast and confident it is achievable? What is your outlook for financial results for the next three years?"

- The underwriters also asked the auditors, who were to provide a report on the TELUS forecast, to describe their review.

At the September 10, 1990 due diligence session, Dominion Securities requested AGT management to provide a review of NovAtel's results since the filing of the preliminary prospectus on August 7, 1990. They were advised that NovAtel had incurred a loss for the month of July of $5.4 million but that the forecast was still believed to be achievable since any shortfall in sales would be made good in the last four months. No questions were asked of NovAtel management or the auditors of the forecast.

Dominion Securities have advised me that there was no indication in the responses to their questions that the forecast was not reasonable. Further, they obtained comfort from the fact that the $16.9 million forecast for the prospectus was lower than earlier forecasts. Also, NovAtel was shown to be one of the top players in the industry in terms of market share, with modern plant, and a large manufacturing capacity.

Dominion Securities concluded that there was no reason for them to doubt that NovAtel had the potential to be profitable.

Findings - Auditors

<u>Responsibilities</u>

An auditor's report on a forecast does not comment on the likelihood of the forecast being achieved. A typical report concludes by saying, "Accordingly, I express no opinion as to whether this forecast will be achieved." What it does do is state specifically whether:

- the assumptions developed by management are suitably supported and consistent with the plans of the entity, and provide a reasonable basis for the forecast,

- the forecast reflects such assumptions, and

- the financial forecast complies with the presentation and disclosure standards established by the Canadian Institute of Chartered Accountants (CICA).

The CICA provides guidelines which the auditor should consider in conducting a review of a forecast and providing a report thereon. Prior to accepting an engagement to report on a forecast the auditor needs to consider:

- the availability of suitable support for the assumptions, and

- whether the planned process for the development of the financial forecast will result in the auditor being able to obtain sufficient evidence to support an unqualified report.

To support a report on a forecast, the auditor would review the entity's previous forecasts, calculations and assumptions, and obtain and evaluate explanations of the differences between previous forecasts and the actual results for those periods. The auditor would further seek evidence to establish that management has identified and supported all assumptions necessary for the preparation of the financial forecast. The auditor would evaluate whether the assumptions individually and taken as a whole provide a reasonable basis for the financial forecast.

The auditors' report on the forecast in the final prospectus was signed by Deloitte & Touche as auditors of TELUS. Deloitte & Touche relied on Ernst & Young to provide a report on the NovAtel component of the TELUS forecast.

<u>Nature of evidence supporting auditors' report</u>

Ernst & Young's working paper files document their concern throughout the review regarding NovAtel's ability to provide a realistic process with appropriate supporting assumptions in light of NovAtel's record for not achieving results that it forecast.

On June 15, 1990, after discussion with NovAtel management, Ernst & Young concluded that a suitable process was in place to allow a substantiated forecast to be prepared.

In July 1990, Ernst & Young wrote a letter to the Chairman of the NovAtel Board asking specific questions regarding support for the various assumptions used, and figures contained, in the forecast. Included was a question as to what factors had changed since the preparation of the forecast which would suggest a higher degree of confidence in the results forecast. The Chairman's reply included the following:

"Firstly on a general level, we have a much larger proportion of systems revenues which have longer lead times and predictability.

"Secondly, in 1988 and prior we were optimistic on revenues and did not have a large enough base to effect a recovery given the occurrence of any adverse events. ... NovAtel revenues were within 3 - 5% of target in September 1988, all of 1989 and the first quarter of 1990. This gives us the confidence that the revenue forecasting process is now well under control (April & May shortfalls will be made up June through September).

"Thirdly the profit shortfall in 1989 was due to significant product introductions which were delayed. The lost margins from these products was in excess of $30 m. There is no such reliance on new products in the second-half of the year. Most of the product portfolio was charged out in the second quarter.

"In summary, accuracy of revenue projection was corrected almost two years ago and we have now caught up with the product introduction schedule."

In their letter of July 1990, Ernst & Young also asked that the Controller of NovAtel prepare a summary of events or factors which could occur that would have a significant negative impact on earnings. Ernst & Young's working papers indicated that no written response was received to the request for a summary of negative events or factors. However, based on discussions with NovAtel management, they concluded that sufficient data and analysis had been received to alleviate their concerns.

In a July 31, 1990 memorandum to file, Ernst & Young noted the following:

"NovAtel's management was not well prepared to compile a forecast and took considerable time to gain an understanding of how it must be a best estimate and how thorough our audit procedures would be. While they ultimately did prepare a forecast on which we are able to opine, two matters caused considerable time delays.

1. Management had difficulty coming to an agreement internally as to what set of assumptions was most reasonable. Further the viewpoint of AGT management was considerably more pessimistic than that of NovAtel's management.

2. As is typical of many NovAtel accounting projects, the forecast was very poorly documented with respect to assumptions and the mechanics supporting the final figures. Ernst & Young therefore had to spend considerable time documenting these."

Ernst & Young relied heavily on management's representations for support of the assumptions and on the consistency of the forecast with the plans of the entity.

Release of comfort letters and report

On August 3, 1990, Deloitte & Touche released their comfort letter to the underwriters and securities commissions in connection with the preliminary prospectus indicating that, based on the information they had and the audit procedures performed to date, they had no reason to believe that they would not be able to issue an unqualified audit report on the forecast consolidated income statement of TELUS for the six months ending December 31, 1990. Deloitte & Touche at this time had only received verbal clearance from Ernst & Young.

On August 8, 1990, Ernst & Young provided a comfort letter to Deloitte & Touche on the NovAtel forecast included in the preliminary prospectus.

On September 10, 1990, Deloitte & Touche released their auditors' report on the financial forecast to the directors of TELUS Corporation. Deloitte & Touche have indicated that they received verbal clearance on the NovAtel component from Ernst & Young on September 10, 1990, together with an assurance that a signed report would be forwarded in due course.

Ernst & Young did not provide Deloitte & Touche with a signed report on the NovAtel component in the forecast prior to the filing of the final prospectus. Ernst & Young have indicated that clearance was given to Deloitte & Touche on September 10, 1990, subject to completion of further discussions with NovAtel and receiving a signed management representation letter. The management representation letter was never received, therefore, no signed auditors' report on the NovAtel component was provided to Deloitte & Touche. It should be noted, however, that since the Chairman of NovAtel signed the TELUS prospectus, he effectively provided the necessary management representations.

Following the issue of the amended prospectus, a complaint was lodged with the Institute of Chartered Accountants of Alberta concerning the auditors' involvement with the NovAtel component of the forecast contained in the prospectus. In May 1992, the Institute of Chartered Accountants of Alberta provided the following public statement:

"The investigation into Ernst & Young was dismissed because there was no evidence of unprofessional conduct. A separate hearing was held relative to Deloitte & Touche. The hearing related to a technical matter of documentation and not to any substantive matter relating to the NovAtel audit. The documentation issue related to Deloitte & Touche's role as parent company auditor. Audit standards require that a parent company auditor obtain sufficient evidence to support their report from a subsidiary company's auditor, and the ICAA hearing committee found Deloitte & Touche's audit file documentation insufficient in this respect."

Findings - TELUS Board

The TELUS Board had the final responsibility for the approval of the TELUS prospectus.

On September 26, 1990, the government through the Minister of Technology, Research and Telecommunications, instructed the TELUS Board to determine the reasons for the forecast error in the prospectus. On October 2, 1990, the Board established a special committee to fulfil the Minister's request. Price Waterhouse was retained by the special committee to assist in the review of the error.

On October 23, 1990, based on interim recommendations made by Price Waterhouse, the TELUS Board passed a resolution changing NovAtel's reporting relationships. Senior officers and management of NovAtel would now report directly to the CEO of TELUS.

On November 28, 1990, Price Waterhouse concluded the following in its report:

"The primary responsibility for the prospectus forecast of NovAtel is with NovAtel management. The secondary responsibility is with professional advisors or experts, being first the auditors of NovAtel, and second the auditors of TELUS. The TELUS Board of Directors, which has the final responsibility for the approval of the Preliminary and Final Prospectuses which incorporated the NovAtel forecast in the consolidated TELUS forecast included in such prospectuses, and the underwriters, are entitled to rely on the representations of NovAtel management, subject to appropriate 'due diligence', and on the auditors' report on the financial forecast."

On November 29, 1990, as a result of Price Waterhouse's report, NovAtel's Chairman, President, and Group Controller were dismissed. On December 4, 1990, the auditors of NovAtel were replaced.

Conclusion

The primary responsibility for the error in the NovAtel forecast rested with NovAtel management.

An earnings forecast cannot be a precise depiction of future events. It is merely an estimate of the most probable results of an organization for a future period.

For NovAtel to be attractive to the general investing public there had to be a high probability of profits. The evidence available at the time indicates that a profit was possible, but to suggest that it was highly probable cannot be defended.

I believe that it should have been realized in July 1990 that NovAtel was as likely to produce a loss as a profit and that no one could reasonably predict the outcome. It was unwise for all those associated with the NovAtel forecast to create the impression of certainty in such uncertain circumstances.

In NovAtel's circumstances, the most reasonable course of action would have been for management to initially consider a range of possible results. The possible results should have contemplated both favourable and adverse circumstances. NovAtel's management appears to have only considered degrees of favourable circumstance.

If NovAtel and AGT management, and the TELUS Board, had considered a range of possibilities, from the favourable to the adverse, they would probably have concluded that to produce a single best estimate to the standard of certainty required by a prospectus, would be unwise. There was just too much risk and uncertainty surrounding NovAtel's operations, and too little reliable information to enable forecasting with any degree of precision. I believe that due to this risk and uncertainty NovAtel should not have been included in the prospectus.

NovAtel management and the auditors of the NovAtel forecast should be held accountable for the error in the prospectus. The fact that the auditors of the NovAtel forecast did not in the end provide a signed auditors' report to the auditors of TELUS is a technicality.

Acquisition of NovAtel from TELUS Corporation

PAGE

Key events

On September 11, 1990, the final prospectus offering the common shares of TELUS Corporation was filed with the Alberta Securities Commission.

On September 18, 1990, eight days after signing the prospectus, the Chairman of NovAtel informed TELUS management that the NovAtel earnings forecast covering the last six months of 1990 would not be met.

On September 23, 1990, an amended prospectus for the sale of TELUS shares was filed with the Alberta Securities Commission.

On October 4, 1990, TELUS acquired all of the business and assets of the AGT Commission, including NovAtel.

On November 29, 1990, Bosch advised TELUS that it would not be proceeding with the purchase of an interest in NovAtel and all negotiations would be terminated.

On December 31, 1990, TELUS exercised its right, described in the amended prospectus, to sell NovAtel to the Province.

On January 17, 1991, the Province, through the AGT Commission (post TELUS), purchased NovAtel from TELUS for $159.4 million. On the same date, a Management Agreement gave TELUS the responsibility to manage NovAtel for a fee of $15 million over two years.

On March 13, 1991, NovAtel's 1990 loss of $203.9 million was announced.

Background

The final prospectus filed on September 11, 1990, described the nature of the TELUS shares being offered for sale by the Province. Included in the prospectus was a forecast of earnings for the last six months of 1990, which included an amount of $16.9 million attributed to NovAtel, a wholly-owned subsidiary of TELUS. It also disclosed that TELUS would receive from Bosch an amount equal to 50% of NovAtel's net asset value, plus $50 million if a proposed sale of a 50% interest in NovAtel was completed.

On September 18, 1990, the Chairman of NovAtel informed TELUS management that recent results indicated that NovAtel's earnings for

the second half of 1990 were expected to be substantially lower than forecast in the prospectus.

When told of the error in the prospectus, the underwriters and legal counsel advised that the change in forecast income was material and that as a minimum an amended prospectus would have to be issued.

Alternatives

One alternative was to include a revised forecast in a new prospectus. The underwriters have informed me that this alternative would have required further due diligence and a revision to the share issue price. This alternative, therefore, would have delayed the sale of AGT.

Another alternative was to remove NovAtel from the share offering. However, the underwriters advised that such an action would have also required a new prospectus. This alternative, therefore, would also have delayed the sale of AGT.

The underwriters concluded that if the share offering was to proceed on schedule, some form of government guarantee was required. The underwriters suggested under this alternative that the government would need to:

1. Compensate NovAtel for any shortfall in its earnings forecast, and

2. Provide an option for TELUS to sell 50% of its interest in NovAtel to the Province at an option price equal to 50% of the net book value of NovAtel as at September 30, 1990, plus the forecasted earnings of $16.9 million, and

3. Provide an option for TELUS to sell a 50% interest in NovAtel at the option price plus $50 million, in the event that the proposed sale to Bosch did not proceed.

This alternative was adopted by the government and formed the basis of an amended prospectus filed on September 23, 1990.

The options described in 2 and 3 above had to be exercised before December 31, 1991.

The government's position was that halting the share issue or removing NovAtel from the issue would be too costly and would result in an unacceptable delay in achieving privatization.

Analysis of indemnities provided to TELUS

Minister's analysis

The Minister of Technology, Research and Telecommunications has informed me that he considered it unlikely that the Province would have to make a large compensation payment to NovAtel or have to reacquire NovAtel from TELUS.

NovAtel management had revised the NovAtel forecast for the last six months of 1990. The revised prediction was a loss of $4.1 million. This would give rise to a compensation payment of $21 million, being the amount by which actual results were expected to fall short of the $16.9 million profit forecast in the final prospectus. It was considered unlikely that a compensation payment larger than $21 million would have to be paid.

The Bosch deal was thought to be progressing as planned, and was expected to be finalized by the end of the first quarter of 1991. The Minister was assured by the President of AGT that Bosch intended to complete the sale. It was considered very unlikely that TELUS would exercise its right to sell NovAtel to the Province.

External analysis

By contrast, an equity research study published by First Boston Canada Limited, on October 4, 1990, noted the following reasons for TELUS to exercise its right:

- NovAtel had never earned a profit in its existence and the cellular handset market was shrinking in a recessionary environment.

- TELUS could obtain a $50 million capital gain and transform a high-risk investment into cash.

- TELUS could invest the proceeds to earn a 12 to 13% return which would be significantly greater than any forecast medium-term profit from NovAtel.

- If NovAtel was not retained within TELUS, the government would likely get a higher price for its remaining interest in TELUS because of higher earnings and lower perceived investment risk.

Amended prospectus

On September 23, 1990, an amended prospectus was filed with the Alberta Securities Commission. The amended prospectus withdrew the forecast consolidated statement of income for the six months ended December 31, 1990, included in the original prospectus. It

was replaced with a forecast consolidated statement of income for the last three months of 1990. This forecast excluded NovAtel. The amended prospectus also disclosed that the Province would compensate NovAtel for any shortfall in its earnings forecast, and had provided TELUS the right to sell NovAtel to the Province.

Reacquisition of NovAtel

On September 24, 1990, Bosch wrote to the President of AGT pointing out that Bosch could rescind the sale agreement in the event that any term or condition was not complied with prior to September 30, 1990. Bosch stated that it had cause for concern and suggested that both parties attempt to renegotiate the agreement on terms which reflected the current performance of NovAtel.

As a result, an amending agreement was signed changing the closing date to December 31, 1990, which would allow the terms to be renegotiated.

On November 29, 1990, Bosch advised that it would not be proceeding with the purchase of a 50% interest in NovAtel and that all negotiations would be terminated.

At the end of November 1990, NovAtel's internal financial statements indicated substantial losses for the year. At the same time, TELUS personnel conducted a review of NovAtel's operations. Based on the information available, TELUS decided to exercise its right to sell NovAtel back to the Province and commenced discussion with the government.

The government formed a Ministerial Task Force comprised of the Ministers of Technology, Research and Telecommunications, and Energy, the Attorney General and the Provincial Treasurer whose task was to convince TELUS to retain its ownership of NovAtel.

The Task Force was not able to convince TELUS and on December 31, 1990, NovAtel was sold back to the Province.

Under the terms of the agreement, described in the amended prospectus, the AGT Commission (post TELUS) paid $159.4 million to TELUS for NovAtel.

The government, having reacquired NovAtel, entered into a Management Agreement with TELUS described in section 9 of this report.

Conclusion

Since the government wanted the privatization of AGT to progress without delay, I believe that the government had no alternative but to agree to compensate NovAtel for any shortfall in its earnings forecast, and to provide TELUS the option to sell NovAtel back to the Province. If NovAtel was not profitable and Bosch did not become a partner, the indemnities provided by the government had the effect of removing NovAtel from the share offering. The arrangement restored the integrity of the prospectus by ensuring that the net assets and profits indicated in the prospectus would in fact accrue to the investors.

The premium amounting to $50 million, which formed a part of the $159.4 million paid to TELUS, represents the conversion of a benefit to shareholders that was dependent upon the Bosch sale proceeding, into a benefit that was certain. Under the terms of the final prospectus, the shareholders would not have received the Bosch premium of $50 million if the sale had not gone ahead. Under the amended prospectus, they would receive $50 million whether or not the sale took place. I believe that there was little need for the government to indemnify the Bosch premium.

Loans Made by NovAtel

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Key events

On March 27, 1987, NovAtel management informed the NovAtel Board that to establish a strong presence in the U.S. cellular systems market, NovAtel would need to provide financing to license holders. On that same date, the NovAtel Board encouraged management to seek external financing arrangements to support NovAtel's systems sales in the U.S.

On July 31, 1987, the NovAtel Board authorized the first financing of systems sales to MSA license holders.

On June 27, 1988, the Chairman of NovAtel explained to the AGT Commission that to be successful in the RSA markets, NovAtel needed to issue undertakings to provide financing to RSA license applicants. These undertakings would be in the form of commitment letters. The AGT Commission decided that if NovAtel was unable to enter into an external financing arrangement with an investment firm, the Commission would loan NovAtel up to U.S. $100 million. The Commission understood that, if necessary NOVA would also provide up to U.S. $100 million.

In June 1988, NovAtel issued its first commitment letter to an applicant in the RSA license lottery.

In August 1988, NOVA informed the AGT Commission of its intent to sell its 50% share of NovAtel.

By August 31, 1988, NovAtel had issued over 300 commitment letters.

On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel.

On April 19, 1989, the AGT Commission authorized the guarantee of bank loans to NovAtel up to an amount of U.S. $340 million, subject to government approval. This action was necessary in order to demonstrate to the FCC that NovAtel had the financial ability to support its commitment letters.

On August 10, 1989, an Order in Council authorized the AGT Commission to guarantee loans to NovAtel up to U.S. $340 million.

On November 17, 1989, the Chairman of NovAtel informed the NovAtel Board that an offer by Motorola to finance the acquisition of licenses by General Cellular Corporation could jeopardize NovAtel's systems sales in the U.S.

On November 29, 1989, the NovAtel Board approved a loan to General Cellular Corporation of up to U.S. $81 million.

The FCC awarded the final RSA licenses in December 1989.

On January 24, 1990, the NovAtel Board approved a loan of up to U.S. $39 million to S & P Cellular Holdings Inc., and up to U.S. $81 million to Consolidated Cellular Communications Corporation (CCCC). Funds were to be advanced to CCCC as the U.S. $39 million was repaid. No funds were ever advanced to CCCC.

On February 28, 1990, the NovAtel Board approved a loan of up to U.S. $108 million to Cellular Information Systems Inc. The loan approval was subsequently reduced to U.S. $60 million.

In June 1990, the first RSA loan agreement was completed.

On January 11, 1991, by Order in Council, the Province was authorized to guarantee NovAtel's indebtedness to a maximum amount of $525 million.

On June 17, 1991, the Management Committee approved the restructuring of the GCC loan.

On April 22, 1992, the Management Committee approved a restructuring of the loan to Cellular Information Systems Inc.

On May 29, 1992, North West Trust Company was given the responsibility to manage NovAtel's loan portfolio.

FCC lottery process

The FCC held hearings to select the most qualified applicants for licenses in the 30 largest MSAs. However, after experiencing extensive time delays with the hearings and because of the large number of applications for licenses, the FCC decided to use a lottery process to award the remaining licenses. The FCC divided the United States into Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs). The 305 MSAs contained 75% of the U.S. population. The 428 RSAs contained the remaining 25% of the U.S. population.

The FCC issued MSA licenses first. The lottery process, dealing with 99,000 applications, was completed in 1987. Having issued the MSA licenses the FCC then started the process for the issue of RSA

licenses. Of the 428 RSAs, 359 are adjacent to MSAs. The average population in an RSA is approximately 150,000.

The FCC awarded the first RSA licenses in September 1988 and the whole process was completed by December 1989. The FCC processed approximately 278,000 applications to award licenses for the 428 RSAs. It should be noted that a separate license application had to be made for each RSA that the applicant was interested in obtaining.

NovAtel had not been a significant competitor in the MSA market. This market was dominated by AT&T, Motorola, Ericsson, and Northern Telecom. These manufacturers had the equipment to serve the large metropolitan areas.

As explained in appendix B, The Cellular Industry, NovAtel's equipment was not designed to operate in major metropolitan areas but was suitable for small MSAs, and RSAs. With the licensing of the RSAs, NovAtel's equipment became very competitive.

The decision to provide loans

Background

As the FCC began to award licenses for the smaller MSAs, NovAtel was considering how it could successfully compete in the U.S. market for cellular systems.

On March 27, 1987, NovAtel management informed its Board that to have a successful systems division, NovAtel had to establish a strong presence in the U.S market. To accomplish this, NovAtel would have to provide systems license holders with financing since competitors were providing such financing.

The NovAtel Chairman was of the opinion that if NovAtel was unable to offer financing, then the NovAtel Board, AGT and NOVA would have to give serious consideration to the continued viability of NovAtel's systems division. If the Boards decided that NovAtel should not provide financing, then they were essentially deciding that NovAtel should stop selling cellular systems equipment to cellular operators.

NovAtel's management was interested in expanding cellular systems sales for the following reasons:

- Gross profit margins on systems equipment sales were generally between 45% and 55%.

- Once a license holder had purchased NovAtel equipment, there was a high probability of further sales in order to expand or upgrade the system.

- Only a small number of manufacturers were competing in the market, and NovAtel's cellular system was well suited for the smaller MSAs and the soon to be licensed RSAs.

Financing offered by competitors

The financing terms that manufacturers generally offered were as follows:

- A loan would be provided for 65 - 100% of the equipment and construction costs which included the cellular system hardware and software that the borrower agreed to purchase from the manufacturer.

- The loan would also provide funds to the customer for working capital.

- The loan would be for seven years, with principal repayable over the last five years. Interest would be at prime rate plus 2 - 3%.

- The loan would be secured by the license and other assets, including the installed systems hardware and software and a pledge of stock or partnership interests.

The reaction of the NovAtel Board

On March 27, 1987, the NovAtel Board encouraged management to pursue financing arrangements to allow NovAtel to compete in the systems business in the United States.

The reaction of the Commission

On October 21, 1987, the AGT Commission discussed the first financed MSA sales which had been approved by the NovAtel Board.

On November 18, 1987, the Chairman of NovAtel explained to the AGT Commission that to be successful in the U.S. systems market, NovAtel needed to provide financing to RSA license holders. A number of Commission members raised concerns about the undue level of risk assumed by NovAtel compared to that of the operator. However, the Chairman of NovAtel made it clear that if NovAtel was unable to offer financing, then serious consideration would have

to be given to the continued viability of NovAtel's cellular systems division.

The Chairman of NovAtel further indicated that every financial institution contacted to that date had expressed interest in providing NovAtel with the necessary funds, but only on the condition that AGT and NOVA guaranteed the loan.

Although it is clear from the minutes of the AGT Commission that the need to finance systems sales was discussed, a conclusion, if any, on this matter was not documented. Based on the Commission's support of commitment letters in 1988, it obviously approved the need to provide systems financing.

Financing for loans

NovAtel's objective when looking for funds to support its lending activity was to obtain external financing with as small a risk as possible to NovAtel, AGT, NOVA, and the Province.

NovAtel looked for an organization to provide financing either directly to a NovAtel customer, or directly to NovAtel for NovAtel to lend to its customers, with the financial institution accepting responsibility for a significant portion of any losses arising on the loans made to NovAtel's customers.

NovAtel intended to pass any borrowing costs on to its customers. It also expected that a favourable interest rate spread between its borrowing and lending would offset a portion of any losses that might arise from loans to customers.

From 1987 to 1990, NovAtel pursued a number of financing alternatives. It wanted a U.S. $50 million facility for MSA loans and a U.S. $200 million facility for RSA loans. Although most institutions were willing to provide the necessary financing, they required large fees, and guarantees from AGT. As a result, an agreement was never reached for the RSA facility. However, an agreement was reached in 1989 with the Canadian Imperial Bank of Commerce (CIBC) - New York for the U.S. $50 million MSA facility. This required a U.S. $10 million guarantee from the AGT Commission which was authorized by Order in Council 259/89. Due to the small number of MSA loans made by NovAtel, this facility was never used.

While NovAtel was looking for permanent financing facilities, its borrowing needs were being met by the CIBC - Calgary which was providing the funds until a permanent financing facility was put in place. This funding was supported in part by letters of assurance

provided by the AGT Commission to the CIBC and a pledge of the loan security which NovAtel obtained from each customer.

In January 1991, a $525 million guarantee was provided by the Province in support of NovAtel's borrowings including borrowings to fund NovAtel's customer loans.

Commitment letters

<u>The need to provide license applicants with commitment letters</u>

Applicants for RSA cellular licenses had to meet certain conditions established by the FCC. One of the FCC conditions was that applicants had to have sufficient financial support to be able to purchase, install, and operate their equipment for 12 months. Furthermore, the license holder had to commence operations within 18 months of the license being awarded. If the license holder failed to commence operations within 18 months, the license would be cancelled.

Systems manufacturers, including NovAtel, provided commitment letters to license applicants so that the applicants could demonstrate that they could meet the FCC's financial requirements. In return, the applicant undertook to purchase any necessary cellular systems from the manufacturer who provided the commitment if the applicant won a license.

The NovAtel Board met on June 22, 1988 to discuss the issue of commitment letters and the source of financing to meet the commitments. The Board reserved its decision until the matters were reviewed with AGT and NOVA.

On June 27, 1988, at a special meeting of the AGT Commission, NovAtel's Chairman explained the need for NovAtel to issue commitment letters to RSA license applicants. He also indicated that NovAtel was negotiating with Kidder Peabody & Co., a large U.S. investment bank, to obtain financing which was expected to amount to approximately U.S. $200 million for these applicants. The Chairman informed the AGT Commission that financing arrangements would soon be in place and that he did not expect that the AGT Commission would have to loan any funds to NovAtel.

At the special meeting on June 27, 1988, the AGT Commission indicated that it supported NovAtel's ongoing negotiations with investment firms. In addition, in the event NovAtel was unable to enter into a satisfactory financing arrangement with an investment firm, the AGT Commission agreed to loan NovAtel up to

U.S. $100 million. The Commission understood that, if necessary, NOVA would also provide up to U.S. $100 million.

In a memorandum provided to the Minister of Technology, Research and Telecommunications on July 5, 1988, the Deputy Minister, who was also a member of the AGT Commission, acknowledged that this business opportunity represented a major turning point for NovAtel. He indicated that this opportunity would be very profitable for NovAtel. Further, if NovAtel wished to participate in the cellular systems market it had no alternative but to provide financing to its customers.

The memorandum also indicated that the amount of the commitment would likely total U.S. $200 million and that most of the risk would be covered by a favourable interest rate spread between the cost of NovAtel's financing and the interest charged by NovAtel to its customers. Also, the loans to each RSA would be between U.S. $1 - 3 million which would spread the risk over a number of RSAs.

<u>Criteria for the issue of commitment letters</u>

NovAtel Board minutes of July 27, 1988, indicate that NovAtel issued commitment letters based on the following criteria:

- Applicants had to have between U.S. $0.75 million and U.S. $1 million in net worth.

- Loans for any one system would be limited to a maximum based on U.S. $20 per person in the license area.

- Satisfactory business plans supporting the application had to be received.

<u>Terms of the commitment letters</u>

If the applicant met the criteria, NovAtel issued the applicant a commitment letter. The letter, signed by both NovAtel and the applicant had the following terms:

- If successful in obtaining a license, the applicant would purchase NovAtel systems equipment.

- Upon receipt and approval of a more detailed business plan following the awarding of the license, NovAtel would provide financing for a specified amount, for the construction and operation of cellular systems.

- The applicant would pay only interest on the loan in the first two years, and would repay the principal in equal instalments over the last five years of a seven year term. Interest was charged at prime plus 2%.

- If the applicant was awarded a license and decided not to purchase NovAtel equipment, the applicant would pay a backout fee of U.S. $100,000.

- As security, the applicant pledged assets, including the system license and also, stock or partnership interests.

  FCC rules prohibit aliens, persons or entities who are not U.S. nationals, from owning more than a 20% interest in a license. However, NovAtel can transfer the license to a qualified third party for consideration, or appoint a trustee to manage the license, subject to FCC approval.

<u>The consequences of issuing commitment letters</u>

During the period June 1988 to August 1988, NovAtel issued over 300 commitment letters. In early November 1988, the FCC requested NovAtel to supply details demonstrating that it had sufficient financial capacity to support its commitment letters. NovAtel responded on December 12, 1988, indicating that it was relying on the financial resources of AGT and NOVA.

On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel. In February 1989, the FCC asked what impact the purchase of NOVA's interest would have on NovAtel's ability to meet its financial commitments.

The FCC understood that NovAtel had issued commitment letters amounting to about U.S. $1 billion. NovAtel's legal counsel in Washington D.C. advised that the FCC would likely conclude that AGT did not have the financial assets to support NovAtel's commitment letters.

NovAtel management determined that of the approximately 100 applicants who had been awarded RSA licenses to January 1990, one-third had used NovAtel's commitment letters. NovAtel's management believed that if the ratio for the remaining licenses conformed to that of the first 100, the FCC should expect NovAtel to provide approximately U.S. $340 million in financing.

Guarantee

On April 19, 1989, the AGT Commission reviewed a request for AGT to provide a guarantee, of up to U.S. $340 million, to banks providing a standby line of credit to NovAtel. The line of credit was to demonstrate to the FCC the financial capability of NovAtel regarding commitment letters issued by NovAtel to RSA system applicants. The AGT Commission authorized the issue of a guarantee up to U.S. $340 million subject to such government approval or consent as was required by legislation.

In a memorandum dated July 4, 1989, the Provincial Treasurer requested the Minister of Technology, Research and Telecommunications to provide an analysis of the business and financial risks which NovAtel was undertaking and which could be passed to AGT through the guarantee, before he requested an Order in Council.

In a memorandum dated July 18, 1989, the Minister of Technology, Research and Telecommunications provided the Provincial Treasurer with a risk analysis for the guarantee. The analysis concluded that the actual risk to AGT was nil. This was based primarily on the assumption that the financing package being negotiated with Kidder Peabody & Co. required guarantees from the AGT Commission for only 20% of loan losses; and further that the value of the licenses and other security was well in excess of planned loan limits.

On August 10, 1989, an Order in Council authorized the AGT Commission to guarantee loans to NovAtel up to U.S. $340 million.

In December 1989, when all licenses for the 428 RSAs had been awarded, it was established that NovAtel had provided financing commitments of U.S. $220.5 million to a total of 132 license winners.

Of these license winners:

- 51 used equipment from a NovAtel competitor and did not use NovAtel financing,

- 36 used NovAtel equipment,

- 27 winners had their licenses withdrawn by the FCC,

- 12 winners were released from their commitment because they purchased NovAtel equipment for other RSAs or had used other equipment vendors' commitment letters for the lottery, and

- 6 winners sold their licenses to GCC and CIS.

The acquisition of market share

The value of cellular licenses is based on the population in the license area. The value per person is known in the cellular industry as a population or "pop" value, i.e. value of license divided by the population in the license area. In early 1988, cellular licenses were valued at about U.S $125 per "pop" for MSAs. By March 1990, MSA and RSA licenses were trading for approximately U.S. $180 and U.S. $80 per pop respectively. The increase in value resulted from the demand for licenses by companies interested in expanding their operations. There were 65 licenses purchased in 1989 and 258 licenses purchased in 1990.

The FCC had selected NovAtel supported applicants in 132 of the 428 RSAs. As the RSA lottery process unfolded, changes in the RSA market structure began to appear.

Companies began to acquire licenses from license winners. The new owners of the license were not obligated to purchase equipment from NovAtel. Also, it appears that other systems manufacturers were prepared to pay NovAtel's backout fee of U.S. $100,000 if a license holder was willing to switch to their equipment. These developments threatened NovAtel's market share.

The effect of the license purchases was a reduction in the number of license owners and an erosion of the commitment to purchase from a specific manufacturer. In the absence of purchase commitments, manufacturers moved swiftly to obtain new sales contracts. Also, as license values increased, systems manufacturers were prepared to loan larger amounts to owners. The increasing license value was seen as security for any default by the borrower.

AT&T, Motorola, Ericsson and Northern Telecom, unlike NovAtel, had been successful in selling equipment to MSAs. These manufacturers had an advantage over NovAtel when selling equipment to RSAs adjacent to MSAs, since the use of compatible equipment allowed a subscriber's call to be handed off between license areas.

NovAtel decided to respond to the changing market by aligning itself with potential cellular industry leaders who were acquiring or planned to acquire MSAs and RSAs. General Cellular Corporation, S & P Cellular Holdings Ltd. and Cellular Information Systems Inc. became the leading companies for the implementation of NovAtel's strategy.

In mid 1990, the capital markets in the United States dried up and a cash shortage was created which severely impacted the cellular

markets. This was created in part by problems and concerns arising in financial markets from the Savings and Loans failures, and losses arising from the use of junk bonds. These events caused the U.S. Federal Reserve Bank to issue more restrictive lending regulations which reduced the amount of funds available for cellular financing. However, the financial institutions also became concerned that the values of licenses had been driven up to unrealistic levels as a result of the high number of license acquisitions. They were therefore reluctant to provide further funding to the cellular market. As a result, the value of licenses fell.

License acquisitions

GCC

General Cellular Corporation (GCC) is a cellular communications Company which owns interests in cellular entities and licenses and operates cellular telephone systems. In 1988 and 1989, GCC was actively acquiring MSAs and RSAs. Some of the RSAs it acquired had used NovAtel commitment letters. A company related to GCC had also used NovAtel's commitment letters for a significant number of RSA license applications. NovAtel was, therefore, expecting to sell a large number of systems to GCC.

In 1989, GCC requested price quotations from cellular manufacturers. When responding, Motorola apparently indicated that it was prepared to provide financing for equipment and working capital. In addition, Motorola was prepared to provide equity funding to enable GCC to acquire existing MSA and RSA licenses, on the condition that Motorola was the supplier of all equipment.

On November 17, 1989, the Chairman informed the NovAtel Board that Motorola was willing to provide GCC with U.S. $15 million for GCC to acquire MSA and RSA licenses provided that Motorola became the systems equipment vendor of choice. He indicated that the loss of GCC as a customer would result in NovAtel losing a significant portion of the systems market. As a result, the NovAtel Board felt that it had to provide a new financing package to GCC.

On November 29, 1989, the NovAtel Board approved an initial loan of U.S. $16.8 million to GCC. The loan could increase to U.S. $81 million to enable GCC to acquire MSA and RSA licenses and to construct and operate the necessary cellular systems. In return, NovAtel became the sole systems supplier to GCC for two years.

At the time the loan agreement was finalized with GCC, both NovAtel and GCC expected that GCC would raise additional equity for its operations. However, it was unable to do so and by late

1990, GCC was in financial difficulty. The value of the security for these advances continued to fall as cellular license values fell across the industry.

NovAtel examined a number of alternatives for minimizing any losses on loans made to GCC. These alternatives included:

- Continuing to fund GCC until it was profitable.

- Having TELUS invest in GCC in exchange for an equity position.

- Requiring GCC to sell MSA or RSA licenses to reduce the loans.

Until a solution was developed, NovAtel agreed to provide further interim financing to GCC for working capital.

By July 1991, the amount loaned to GCC, including accrued interest, had reached U.S. $79 million. Of this amount, U.S. $28.4 million was used for working capital, U.S. $20.2 million was used to purchase NovAtel equipment and U.S. $30.4 million was used to acquire markets.

On June 17, 1991, after examining a number of alternatives, NovAtel's Management Committee approved the sale of the loans to GCC Holdings Inc. which at the time of the settlement, was not affiliated with GCC. The loans amounting to U.S. $79 million were sold for U.S. $33 million in cash, a U.S. $12 million subordinated note due December 31, 1997 bearing interest at 10%, and a 10% equity position in GCC.

In October 1991, GCC, and GCC Holdings Inc. which was financed by a large venture capital organization, entered into an agreement whereby GCC Holdings agreed to recapitalize GCC. In order to implement the recapitalization, GCC filed a voluntary petition under Chapter 11 of the United States Bankruptcy Code. The Company was restructured and emerged from Chapter 11 bankruptcy in March 1992.

S & P

On January 24, 1990, the NovAtel Board was informed of a business opportunity in the Gulf of Mexico, which was a specialized license area that used satellite technology. In August 1989, **S & P Cellular Holdings Inc.** (S & P) had contracted to purchase Petroleum Communications Inc. (PCI), the owner of the license covering the Gulf of Mexico. In addition, a related Company, Consolidated Cellular Communications Corporation (CCCC), wished to acquire RSA licenses whose areas were adjacent to the Gulf. The

objective of the companies was to integrate the services provided in the Gulf and the adjacent RSAs. By using satellite and microwave technology, oil platforms and drilling rigs, and land-based stations would be linked in order to achieve economies.

On January 24, 1990, the NovAtel Board approved a loan of up to U.S. $39 million to S & P to acquire PCI. It also approved a loan of up to U.S. $81 million to CCCC to fund the acquisition of licenses and the construction and operation of MSAs and RSAs using NovAtel equipment. Funds were to be advanced to CCCC as the U.S. $39 million was repaid.

By December 31, 1990, NovAtel had advanced U.S. $37 million to S & P who used the funds to purchase PCI. The arrangement to provide funds to CCCC was never taken up. The reason that no funds were advanced was because there was a disagreement between CCCC and S & P which resulted in the companies abandoning their joint business plan. As a result, NovAtel failed to make any systems sales to CCCC or S & P.

During the period December 1990 to April 1991, NovAtel worked with S & P and a venture capital group to try to replace the U.S. $37 million financing provided by NovAtel. However, this effort was unsuccessful. Other attempts to replace or restructure NovAtel's loan have been unsuccessful.

At May 29, 1992, S & P owed NovAtel U.S. $37 million plus accrued interest of U.S. $4.2 million. S & P is having difficulty making interest payments in full and principal repayments because of a contraction in oil-related activity in the Gulf of Mexico.

CIS

Cellular Information Systems Inc. (CIS) owns and operates several MSAs and RSAs. It approached NovAtel for funding to build five regional operations for MSAs and adjacent RSAs if it could acquire the necessary licenses from existing owners.

CIS was seeking up to U.S. $110 million in funding to finance license acquisitions, and the construction and operation of MSAs and RSAs. On February 28, 1990, the NovAtel Board approved a loan to CIS of U.S. $108 million. The commitment was subsequently reduced to U.S. $60 million because NovAtel could only raise this amount from its bank. CIS was to raise the balance of the funding. In return for the loan, NovAtel received an exclusive supply agreement under which all new equipment would be provided by NovAtel, and existing Astronet/Mitsubishi and Motorola equipment would be replaced with NovAtel equipment over a period of time.

By December 31, 1990, NovAtel had advanced U.S. $60 million to a subsidiary of CIS which was to be used to reduce the existing bank borrowings of CIS, provide capital for RSA license acquisitions and fund equipment purchases and working capital. Of the amount loaned, U.S. $39.5 million was used to reduce bank loans, U.S. $9.7 million was used to acquire markets, U.S. $8 million was used for NovAtel equipment purchases. The balance of U.S. $2.8 million was used for working capital, including interest on the loan.

CIS was not able to raise the additional equity it required over the U.S. $60 million, and by early 1991 it was experiencing liquidity problems.

At December 31, 1991, CIS owed NovAtel U.S. $60 million plus accrued interest of U.S. $6.8 million.

On April 22, 1992, the Management Committee approved a restructuring of the loan. Under the restructuring, CIS will dispose of seven licensed properties. The properties will either be sold by CIS with the proceeds going to NovAtel, or the properties will be transferred to a trustee to operate the properties on NovAtel's behalf pending a sale. Any sale of these properties must be approved by NovAtel. In return NovAtel will forgive all interest and principal in excess of U.S. $30 million on the outstanding loan balance. Two remaining license properties will be held as security for the remaining loan of U.S. $30 million. The remaining loan will bear interest at prime plus 1.5%. Principal is payable at maturity in 1999. The first five years of interest is deferred.

Under the restructuring, the remaining loan of U.S. $30 million will increase by U.S. $1.8 million to provide working capital for the two properties securing the loan.

On September 8, 1992, CIS and certain subsidiaries of CIS filed Chapter 11 Bankruptcy proceedings. The subsidiary to which NovAtel provided its loan is not a party to the proceedings and CIS has advised the government that it expects to effect the restructuring of the NovAtel loan as contemplated by CIS and NovAtel.

GCI

General Cellular International (GCI) had an opportunity to get into the cellular market in Peru and Mexico. In early 1990, the owners of GCI, who were also principals in GCC at this time, approached NovAtel for their financing and equipment needs.

NovAtel committed U.S. $4 million for the purchase of NovAtel equipment and other equipment for the Telemovil system, and U.S. $1 million to enable GCI to acquire a 40% interest in

Telemovil in Peru. This money was provided on the understanding that GCI was going to raise U.S. $25 million and the NovAtel loan would be repaid within two years.

However, GCI was unable to raise the equity. As a result, NovAtel's loan was increased to U.S. $5.6 million. Of this amount, U.S. $1 million was used to buy shares in Telemovil, U.S. $1 million was used to post performance bonds in Peru and Mexico, U.S. $0.3 million was used for working capital and U.S. $2.8 million was used for NovAtel equipment, and U.S. $0.5 million was used for other equipment.

The loan was secured by personal guarantees of the owners of GCI plus the pledge of a majority shareholding in another cellular company in the U.S.

This loan was never taken to the NovAtel Board for approval.

No amount was repaid on this loan. In addition, Telemovil was unhappy with GCI's performance because it did not forward working capital as promised. Telemovil was also unhappy with the performance of the NovAtel equipment.

In order to correct matters, NovAtel began dealing directly with Telemovil who assumed responsibility for the NovAtel equipment loans.

On May 29, 1992, the remaining balance owing to NovAtel from GCI amounted to U.S. $4.3 million including accrued interest. There are no material assets in GCI. Presently, there is a judgement against the principals, and efforts are being made to access the security for the loan provided through the personal guarantees of the principals.

Unusual loans

Telemovil

On March 4, 1991, the government approved a U.S. $10 million commitment to Telemovil. Of this amount, U.S. $2.8 million relates to NovAtel equipment loans assumed from GCI. The balance of the financing is also for NovAtel equipment.

The loan is secured by all assets of Telemovil except the cellular license, and 40% of the shares of Telemovil.

The loan is repayable in quarterly instalments from 1992 to 1998 with interest at prime plus 2%.

GMD

As a result of the RSA lottery, the **GMD Partnership** (GMD) won three licenses in the states of New York, Georgia and North Carolina.

NovAtel had provided commitment letters for these markets and GMD approached NovAtel for funding. However, a number of elderly partners wanted cash from GMD for the markets as soon as possible. Therefore, GMD requested a loan from NovAtel, of which U.S. $5 million would be distributed to the partners wanting to retire.

NovAtel did not agree to this amount. However, NovAtel felt that these were good markets and provided an opportunity to penetrate an area where NovAtel did not have a strong presence. In order to access these markets, the Management Committee agreed on February 11, 1991, to provide GMD with a seven year loan amounting to U.S. $13.6 million of which U.S. $2.0 million could be distributed to the partners. The approved loan and distribution amounts were subsequently reduced to U.S. $12.7 million and U.S. $1.3 million respectively. In addition to the distribution, the approved financing was U.S. $3.3 million for NovAtel equipment, U.S. $3.0 million for other equipment, and U.S. $5.1 million for working capital.

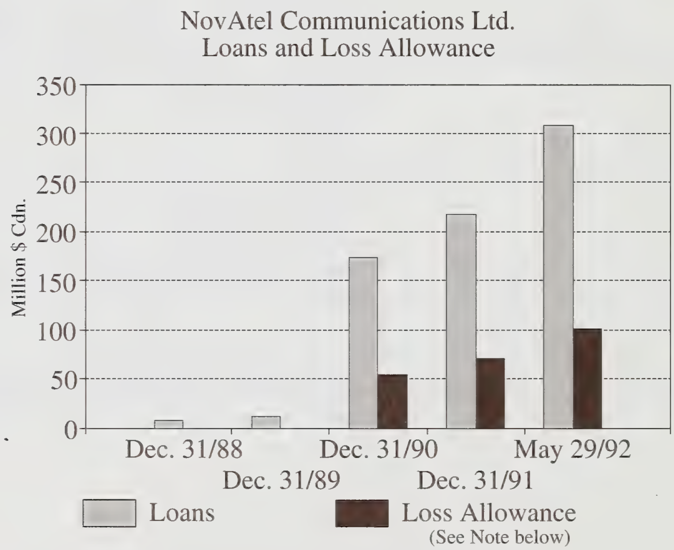
The loan was approved because it was within the U.S. $20 per pop criterion established by the Board in 1988. Also, cash flow projections indicated that the loans could be repaid. In addition, the portion of the loan for the distribution was structured as a debenture, which can be converted into 7% interest in the partnership.

At the present time, there is a petition filed with the FCC to have the licenses of these three markets revoked. The petition relates to alleged violations of foreign ownership rules at the time of the lottery.

Loan portfolio

The following table shows the growth of NovAtel's loan portfolio in the period from January 1, 1988, to May 29, 1992. The table shows the loans and allowance for loan losses. At May 29, 1992, there was U.S. $256.1 million of outstanding loans and accrued interest against which an allowance of U.S. $83.2 million had been made. The net book value of the portfolio at May 29, 1992 is therefore U.S. $172.9 million, being Canadian $208.3 million.

Further, as at May 29, 1992, NovAtel had contracted to provide additional financing of U.S. $55 million to systems customers. Additionally, the Province assumed NovAtel's outstanding financial commitments in the amount of U.S. $15.4 million.



Note: The loss allowance includes amounts reported in NovAtel's financial statements as deferred revenue. Deferred revenue is described on page 152 of this report.

At May 29, 1992, the loan portfolio consisted of:

	U.S. $ Millions	Cdn. $ Millions
Conventional RSA	$106.4	$128.2
Conventional MSA	8.4	10.1
GCC	12.0	14.5
CIS	67.9	81.8
S & P	41.2	49.6
Telemovil	10.5	12.7
GMD	5.4	6.4
GCI	4.3	5.2
Gross loans outstanding at May 29, 1992	256.1	308.5
Less: Loan loss allowance	(83.2)	(100.2)
Net book value of loans at May 29, 1992	$172.9	$208.3

The conventional loans are the loans to owners of MSAs or RSAs for equipment and working capital only. Typically, 40% of the loan is for NovAtel equipment, 30% for non NovAtel equipment and 30% for working capital. These loans usually average U.S. $2 to 4 million. At May 29, 1992 conventional loans are outstanding for 60 RSAs and 3 MSAs.

Backout fees

NovAtel has collected U.S. $1 million from ten applicants to whom the FCC awarded licenses but who chose not to purchase systems equipment from NovAtel. Currently, there are a further 41 license holders who agreed to purchase equipment from NovAtel, but did not do so and also did not pay the fees. A decision has been made to pursue collection of the fees.

North West Trust Company

On May 29, 1992, North West Trust Company was given the responsibility to manage NovAtel's loan portfolio.

Under the terms of a management agreement, North West Trust Company (NWTC) is appointed manager of all loans and accounts receivable and all land and buildings included in 496072 Alberta Ltd., Cellular Systems Management Inc. (now named NFI Finance, Inc.), Cellular Finance Inc., Systems Finance Inc. and NovAtel Finance Inc.

The NWTC manager has the authority to:

- negotiate, settle the terms of and restructure if necessary by new loan arrangements, any loan receivables or accounts receivable;

- fulfil loan commitments and advance monies, and make new loans for the purpose of protecting the assets;

- supervise the collection of all loan and accounts receivable and exercise all reasonable efforts to collect the loan and accounts receivable; and

- manage, operate and sell all lands and buildings.

NWTC will be paid an asset management fee which is 1.5% per annum of the gross assets being managed until May 31, 1993. Thereafter, the fee rate will be 1.25%. Gross assets are defined as the net book value of all assets plus the amount of specific and general provisions deducted from such assets.

NWTC will also be paid a collection fee equal to 0.75% of the cash income from principal on loans receivable and the cash portion of sale proceeds received in respect of the sale of any asset excluding interest. In the event of a bulk sale, being more than 90% in value of all assets except land and buildings, the collection fee is reduced by one half.

NWTC will also be reimbursed for all third party expenses.

Conclusion

Conventional loans

I believe the decision to provide financing to cellular operators for systems equipment and working capital was reasonable given the circumstances at the time. The fact that competitors were offering financing required NovAtel to follow suit or withdraw from the U.S. market.

I believe that initially competitors were willing to provide financing as they had a better understanding of the risks and opportunities involved than banks and trust companies or other conventional sources of funds. Having accepted the additional risk of providing financing, these manufacturers probably concluded that a high gross profit margin on systems sales was necessary to cover potential loan losses.

It is, therefore, not surprising that NovAtel's gross profit margin on systems sales was usually in the 45 to 55% range.

License acquisition loans

The decision to lend large amounts to certain borrowers for license acquisitions exposed NovAtel, the AGT Commission, and ultimately the Province to an unacceptable level of risk. I believe NovAtel should not have made license acquisition loans.

Four of the loans that I have identified (GCC, S & P, CIS and GCI) were large, and a significant portion of the funds provided was used by the recipients to purchase licenses rather than NovAtel equipment.

At the time NovAtel's funds were being used to acquire licenses, RSA licenses were being valued at approximately U.S. $80 per pop and MSA licenses were being valued at U.S. $180 per pop. However, license values declined when market participants realized that these values could not be sustained by cellular systems operating profits. In effect, NovAtel's funds were used in large measure to fuel speculation rather than to finance systems sales that earned a healthy gross profit. When NovAtel decided to finance other people's license acquisitions, I believe it was preoccupied with market share without sufficient regard to the management of risk.

Loan limits

If the AGT Commission or the Province had imposed a dollar limit on the overall loan commitments which could be incurred by NovAtel, as well as on the amounts which could be loaned by NovAtel to individual borrowers, I believe the risk of loss would have been greatly reduced.

Such limits have been imposed on other Provincial agencies. For example, the Alberta Opportunity Company which is a Provincial agency involved in lending activities, has lending controls imposed by the Alberta Opportunity Fund Act. The Act imposes an overall limit on the amount of the Fund of $300 million. In addition, all loans over $1 million must be approved by Order in Council. Similarly, the Agricultural Development Act requires the Alberta Agricultural Development Corporation to have all individual loans over $1 million approved by Order in Council.

The government was aware of NovAtel's lending activities by mid 1989 when the requests for Orders in Council were received. Had the AGT Commission or the government acted to limit commitments to the amounts outstanding at that time or imposed controls over individual loan limits, it is possible the loans to GCC, S & P, CIS and GCI would not have been made.

Restructured loans

I believe that the restructuring of the GCC and CIS loans by the Management Committee was reasonable in the circumstances. I base this conclusion on my review of supporting documentation, including appraisals of the value of the security for these loans.

GMD loan

I believe the loan to GMD is adequately secured based on the market value of the licenses taken as security. However, the security is at risk because the FCC could revoke the licenses as a result of a petition alleging violation of foreign ownership rules.

Loan loss provision

Ultimately, a license holder's ability to repay loans is dependent on the profitability of the cellular system being operated. In most cases, cellular systems were not expected to be profitable in the early years. At this time, it is difficult to determine the future profitability of RSAs and therefore how the loans will perform. However, based on the information available, I believe an adequate allowance for loan losses has been made.

Divestiture of NovAtel

Key events

In early December 1990, a Ministerial Task Force was formed to examine the likelihood of TELUS exercising its right to sell NovAtel back to the Province.

On December 31, 1990, TELUS exercised its right, described in the amended prospectus, to sell NovAtel to the Province.

On January 11, 1991, by Order in Council, the Province was authorized to guarantee NovAtel's indebtedness to a maximum amount of $525 million.

On January 17, 1991, the Province, through the AGT Commission, purchased NovAtel from TELUS for $159.4 million. On the same date, a Management Agreement gave TELUS the responsibility to manage NovAtel for a fee of $15 million over two years. As a result of this Agreement, a Management Committee was formed which first met on January 29, 1991.

On March 13, 1991, NovAtel's 1990 loss of $203.9 million was announced.

On March 15, 1991, NovAtel laid off 222 employees, reducing the workforce from 1890 to 1668.

On May 1, 1991, NovAtel laid off 340 employees, further reducing the workforce. Additionally, plans to open the Calgary Cimplex plan were abandoned.

On September 13, 1991, Mr. Pudwill signed a letter of intent to purchase NovAtel, except for the outstanding loans.

On December 18, 1991 discussion of Mr. Pudwill's first proposal was called off.

On January 14, 1992 Northern Telecom reiterated an offer to purchase the systems business of NovAtel.

On February 6, 1992, the Management Committee listened to and assessed a purchase proposal from Northern Telecom and a second purchase proposal from Mr. Pudwill.

On April 24, 1992, the Management Committee recommended that the government accept the offer submitted by Northern Telecom and a third offer from Mr. Pudwill through his Company, Telexel Holding Limited.

On May 21, 1992 the government announced the divestiture of NovAtel.

Ministerial Task Force

In early December 1990, a Ministerial Task Force was formed to examine the likelihood of TELUS exercising its right to sell NovAtel back to the Province.

As discussed in section 7, Acquisition of NovAtel from TELUS Corporation, the Ministerial Task Force was unable to dissuade TELUS from exercising its right to sell NovAtel to the Province. As a result the Province became responsible for NovAtel, effective December 31, 1990.

On December 31, 1990, NovAtel's senior management was severely depleted. The Company's long-time President had resigned in June 1990, and as explained in section 6 - Error in the TELUS Corporation Prospectus, the employment of the new President was terminated on November 29, 1990. The Chairman and the Controller had also been dismissed by TELUS on that date. The Executive Vice President, Corporate Development of TELUS had been placed in operational control of NovAtel during October.

In January 1991, the financial results of NovAtel for 1990 were not known. However, senior government officials knew that the losses for the year could be as large as $100 million. This information was provided to them based on the early results from the audit of the 1990 financial statements, which started in December 1990.

The Ministerial Task Force arranged for the AGT Commission (post TELUS) to enter into a Management Agreement with TELUS for the ongoing management of the Company. The Task Force was of the opinion that the government should continue to finance NovAtel's operations until alternatives could be evaluated.

The Ministerial Task Force does not appear to have considered the immediate retention of a firm of corporate restructuring experts. Such a firm's expertise lies in analyzing the source of losses, and taking action to either limit losses or return a company to profitability. Instead the Task Force decided to return to the personnel and resources of TELUS, as an immediate solution to the management crisis.

The Management Committee

Management Agreement

The Management Agreement, dated January 17, 1991, transferred to TELUS the responsibility to "...manage the business and affairs of NovAtel in a prudent manner consistent with the management of a corporation of similar size to, and operating in a similar industry as, NovAtel..." According to the Agreement, TELUS would exercise its responsibility for NovAtel by establishing a Management Committee which would report directly to the government. More specifically, the Committee would exercise the duties usually handled by a board of directors.

The Management Agreement provided for the government to appoint three members of the Management Committee while TELUS would appoint another three. Subsequently the membership was increased to four members each.

TELUS also had the right to install personnel at NovAtel and to recoup management fees. The Agreement was for a maximum of two years, and TELUS was entitled to a maximum fee of $15 million. In addition TELUS was entitled to the expenses related to its employees assigned to NovAtel.

Terms of reference

The Management Committee's terms of reference gave it wide-ranging authority over NovAtel's operation and reporting, expenditure approval, and the human resources function. As well, the Management Committee was expected to prepare a series of plans and reports for the Company including:

- an overall "NovAtel Action Plan,"
- annual business plans,
- a long-term strategic plan,
- a business viability assessment, and
- a divestiture strategy.

The government reserved the right of approval over these plans and reports, changes in the business of NovAtel, major dispositions, and commitments for loans, advances, grants, or guarantees.

NovAtel Action Plan

The NovAtel action plan was developed by the Management Committee and was approved by the Ministerial Task Force. It involved three main elements:

- restructure NovAtel,
- develop longer-term alternatives, and
- prepare the Company for sale.

Operational activities of the Management Committee

The Management Committee first met on January 29, 1991.

Human resources

NovAtel was experiencing severe staffing problems. Staff levels had been significantly increased during 1990 in anticipation of business that did not materialize. Senior management had been depleted, and NovAtel had been without a Chief Financial Officer since 1989.

The Executive Vice President of TELUS, who had been placed in operational control of NovAtel in October 1990, was confirmed as President and Chief Executive Officer by the Management Committee.

During March 1991, NovAtel hired a Chief Operating Officer and a Chief Financial Officer. The Management Committee also assessed the existing NovAtel management team which resulted in reorganization and downsizing. Of NovAtel's 1890 employees, 222 were laid off during March. A further 340 employees were laid off in May. Plans to open the Calgary Cimplex plant were abandoned.

On July 8, 1991, the Management Committee approved a Compensation and Incentive Program in order to retain staff. The program allowed for salary increases and the payment of incentive bonuses based on the operating plan for the last six months of 1991. Incentive bonuses totalling $653,000 were paid by NovAtel in February 1992.

The Management Committee also had to deal with claims for wrongful dismissal from the three executives released in November 1990. These claims were settled in the amount of $680,000, with the costs borne by TELUS.

Operations

The Management Committee needed to assess the strengths and weaknesses of NovAtel to determine corrective action required to solve problems and reduce costs. To assist in this assessment, the Committee commissioned internal and external studies. The Coopers & Lybrand Consulting Group performed a "Management

Assessment and Organization Review" in early 1991. Based on input from NovAtel employees, they found that a highly fragmented, internally competitive situation existed wherein managers undertook their own tasks with little regard for the Company's overall objectives. Some of the review's conclusions were as follows:

- NovAtel senior management was technology focussed.
- NovAtel had a culture of competitiveness rather than co-operation.
- Senior management had unwarranted/unrealistic optimism.
- Company "values" would not support long-term growth nor profitability.
- NovAtel was a very entrepreneurial organization but had difficulty maturing to the level necessary to manufacture and distribute consumer electronics in a profitable manner.
- NovAtel lacked strength in many central functions, including Finance, Marketing, Information systems, Research and Development, Internal Audit.
- Communications and interaction between business units was a major weakness.
- The Company experienced high staff turnover and lack of continuity in a number of key positions.
- NovAtel had very substantial government support without real accountability.
- Unrestricted access to funds allowed senior management to try "buying" their way into the business.

In two studies dated April 1991 and June 1991, SRI International examined the research, manufacturing and distribution processes at NovAtel. It reported that NovAtel's systems business might have a viable future if properly managed, and commented as follows:

"NovAtel's capabilities in the systems business are very good across the board and compare well to those of other companies in that business."

"NovAtel's technical capabilities are valuable assets in the wireless business, but they have been mismanaged. The company has strategic weaknesses, both technical and managerial."

"Management must address infrastructure problems, e.g., the lack of consistent policies and procedures and assignment of individual responsibility."

SRI International's reports concluded that NovAtel's subscriber equipment business likely could not be sustained under existing conditions, and commented as follows:

"NovAtel's capabilities in its current subscriber business (i.e., the mass market side) do not compare as well [to those of other companies in that business], especially in terms of total quality and miniaturization packaging. The company's technical assets are better than marginal, but they are not world class."

"In the subscriber business, NovAtel's distribution channel and field sales activities are valuable assets. However, to stay in the subscriber business for the long term, NovAtel will need a line of reliable, competitively priced subscriber products incorporating the latest technology."

"The potential of NovAtel's technology base is only partially realized because of managerial shortcomings."

To strengthen and streamline NovAtel while searching for a purchaser, the Management Committee made significant changes. For example, it abandoned plans to open the Cimplex production plant in Calgary, resized the company, moved from five Calgary locations to two, and hired consultants to improve the manufacturing process. The Committee also negotiated new contracts with several customers such as Northern Telecom and IBM, and oversaw the development of new products including the Convertible Cellular Telephone.

Reporting

In March 1991, the annual financial statement audit for 1990 was completed and the magnitude of NovAtel's losses was known. At this time it was expected that large operating losses would continue throughout 1991.

Apart from the annual audited financial statements, NovAtel's reporting was a major weakness and was therefore revised. Commencing in July 1991, significantly improved internal monthly financial analyses were prepared.

An audit for the eight month period to August 24, 1991, was performed by Coopers & Lybrand, Chartered Accountants, in anticipation of a possible August or September divestiture. In addition, internal audit projects were undertaken by TELUS internal auditors. In November 1991, the Management Committee reviewed reports specially prepared by management which examined NovAtel's financial situation in-depth.

In late 1991, a major fraud was discovered at Carcom, a NovAtel subsidiary in Fort Worth, Texas. Certain Carcom executives colluded in defrauding the Company. NovAtel has an outstanding insurance claim in the amount of $6 million in connection with this fraud.

The Management Committee kept the Department of Technology, Research and Telecommunications, and Treasury continually updated by forwarding copies of all studies and reports, making regular presentations at meetings, and communicating regularly by telephone and in person. Periodically the Management Committee made presentations to the Ministerial Task Force.

Systems financing

The Management Committee had to decide what to do about the financing of cellular systems operators who had received commitments from NovAtel.

Legally, NovAtel had binding agreements to fund systems operators to whom commitments had been made. Had the Company not lived up to these agreements, it would have been liable to litigation. Also, from a business point-of-view, if NovAtel were not to honour its commitments, the Company's reputation would be harmed and its systems business would be destroyed. As the systems business was the activity that produced gross profits for NovAtel, its destruction would reduce the value of the Company to any potential purchaser. Based on legal and other advice obtained, the Management Committee felt compelled to honour existing commitments.

A new process was established in February 1991 to handle applications for disbursement of systems financing. NovAtel staff in Atlanta prepared an analysis of each application for funds. This analysis was reviewed by NovAtel's financial and legal staff in Calgary, who attached a recommendation to the proposal. The proposal and recommendation were then sent to the Management Committee and the Departments of Technology, Research and Telecommunications and Treasury for review and approval. Because of time limitations, it was desirable to have the Committee and Departments do their reviews concurrently. When all approvals were in place, NovAtel made the loan.

License acquisition loans

Some companies to whom loans had already been disbursed had experienced difficulties, which made recovery of the loan amounts doubtful. The Management Committee had to consider alternatives and recommend solutions.

The first major loan considered was that to General Cellular Corporation (GCC). The Management Committee engaged U.S. consultants and investment and legal advisors to assist in providing an acceptable solution. Several options were considered, and a restructuring proposal for GCC was approved by the Committee on June 17, 1991. Similarly, the Committee worked to restructure loans to S & P Cellular Holdings Inc. and Cellular Information Systems Inc. These loans are discussed in more detail in section 8.

Divestiture activities of the Management Committee

January to December 1991

On January 29, 1991, at the first meeting of the Management Committee, a divestiture sub-committee made up of members of the Committee was formed. It consisted of the Chairman of the Management Committee and two others.

On March 8, 1991, S.G. Warburg & Co. Ltd. was retained as financial advisor to find a buyer for the Company.

S.G. Warburg prepared a Confidential Information Memorandum in May 1991 for circulation to 61 firms world-wide who might be interested in acquiring NovAtel. Eleven firms expressed interest, of which six were given tours of NovAtel's facilities. The replies of several firms who chose not to submit proposals included the following reasons for a lack of interest:

- Operational problems were greater than anticipated, with little prospect of NovAtel ever attaining profitability.
- New subscriber equipment products had less commercial appeal than expected and were unlikely to be brought to market on time.
- Benefits of NovAtel's restructuring had not yet been realized, and it was evident that further restructuring would be required.

By August 1991, only two offers had been received. Northern Telecom, who had previously expressed interest in 1985 and 1989, was interested in buying NovAtel's systems business. Mr. Horst Pudwill offered to purchase the entire Company less the loans associated with the systems business and related debt. He offered only $1 million in cash, but he was willing to assume all non-systems liabilities which amounted to approximately $180 million. He offered to provide the required cash for future disbursements against NovAtel's systems loans commitments and committed to injecting further funds into the new NovAtel.

As the Ministerial Task Force had approved an action plan to sell the entire Company, negotiations with Mr. Pudwill took precedence. His proposal was extremely attractive and appeared to have the potential for resolving all parties' concerns.

On September 9, 1991, S.G. Warburg recommended that NovAtel accept Mr. Pudwill's offer. A letter of intent between NovAtel and Mr. Pudwill was signed on September 13, 1991, with a proposed closing date of September 30, 1991.

Attempts to finalize the sale encountered problems, mainly due to the inability of Mr. Pudwill to establish appropriate financing arrangements. The closing date was extended to December 31, 1991.

The Management Committee learned prior to a meeting on December 7, 1991, that upon acquiring control of NovAtel, Mr. Pudwill intended to sell the systems business to Northern Telecom and enter into a joint venture agreement with a European manufacturer to operate the subscriber equipment business.

At a meeting on December 7, 1991, the Chairman of the Management Committee learned that, due to potential conflicts with other of its joint venturers in the U.S., Mr. Pudwill's potential European partner could not participate in NovAtel's operations.

Further discussion of this sale was called off by the Chairman of Management Committee on December 18, 1991.

January to May 1992

Before proceeding to identify and negotiate with other possible purchasers, the divestiture sub-committee again met with Mr. Pudwill. He proposed a new purchase agreement, again for the entire Company less the loans associated with the systems business and related debt. However, the terms of this offer were substantially different from his first offer. This time, he would assume responsibility for only $125 million of operating debt, but that debt would have to be secured by a government guarantee. Mr. Pudwill would inject less of his own funds than he committed in his first offer. Further, the government would be required to purchase $35 million of preferred shares bearing 8% interest and to be redeemed by the end of 1996. The new company would pay the government 20% of its earnings each year for five years. The sub-committee found this offer unattractive and a series of counter proposals followed.

On January 14, 1992, in the midst of these negotiations, Northern Telecom reiterated its 1991 offer for NovAtel's systems business. Northern Telecom had first expressed interest in 1985. It also made an offer during the AGT Commission's search for a strategic partner in 1989. Although Northern Telecom offered less than the sub-committee felt the systems business was worth, it was felt that the negotiation process would probably result in an increased offer.

The full Management Committee met on February 6, 1992, to listen to and assess presentations by Mr. Pudwill and Northern Telecom. The day after the presentations, negotiations concerning Mr. Pudwill's second offer were terminated.

On February 7, 1992, the Chairman of the Management Committee met with the Ministerial Task Force to present the following plan:

- sell the systems business to Northern Telecom;

- wind down NovAtel's European operations;

- transfer the loans associated with the systems business to the government, who in turn would provide the funds necessary to repay the related debt;

- either wind down the subscriber business, or make it more attractive for a sale.

The Ministerial Task Force approved the plan presented by the Management Committee.

The divestiture sub-committee contacted Northern Telecom the next day and began negotiations with the objective of selling the systems business at net book value plus a $20 million premium. The sub-committee met with Mr. Pudwill on February 12, 1992, to attempt to negotiate acceptable terms for the sale of the subscriber business.

The divestiture sub-committee had several concerns during these final negotiations. In dealing with Northern Telecom, the main concern was Northern Telecom's ability to service NovAtel's existing systems customers and equipment. If Northern Telecom was not able to provide adequate support, systems customers might retaliate by withholding payment on their loans. Such action could jeopardize the systems loan portfolio to be acquired by the government. To preserve jobs within Alberta, the sub-committee negotiated not only to have Northern Telecom maintain its presence in the Province, but also to establish new research and development and manufacturing centres which would service Northern Telecom's worldwide cellular requirements. In negotiating with Mr. Pudwill, the main concerns were the purchaser's financial stability and clarification of what assets and liabilities were to be transferred.

By April 22, 1992 the Management Committee had negotiated contracts with Northern Telecom and Telexel, Mr. Pudwill's Company. The signed contracts were presented to the government on April 24, 1992. The Management Committee advocated strongly that they be accepted. On May 14, 1992, the government signed the agreements.

The Management Committee inherited a complex and intractable problem. Given its terms of reference, I believe the Committee acted in a professional and responsible manner in carrying out its assignment.

The divestiture

The final contracts for the divestiture represent an organized distribution of the ownership of the assets and liabilities of the NovAtel corporate entity. Because the Company was to be split between several parties, it was necessary for the contracts to systematically allocate the assets and liabilities to their ultimate owners.

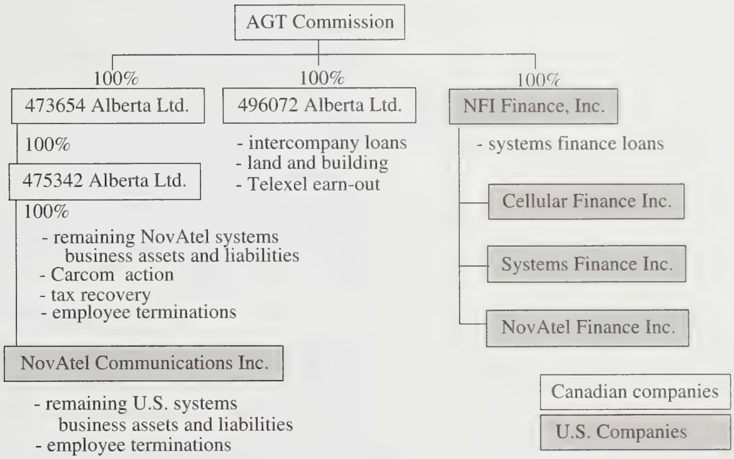
On May 25, 1992, the operations and certain assets of the cellular systems business were purchased by Northern Telecom Limited for $38 million cash. Northern Telecom also agreed to invest $12 million in a Calgary based centre of excellence for wireless communications.

On May 29, 1992, the shares of NovAtel Communications Ltd., effectively representing the assets and liabilities of NovAtel's subscriber equipment business, were sold to Telexel Holding Limited. for $3 million cash. Telexel also agreed to pay to the Province a minimum of $20 million from NovAtel's profits over the following five years.

On May 29, 1992, the remaining assets of the cellular systems business, systems loans and long term accounts receivable, the majority of land and buildings and certain related accounts payable and accrued liabilities, aggregating approximately $219 million were acquired by the Province through subsidiary companies of the AGT Commission (post TELUS), by assumption of NovAtel's related bank debt in the amount of approximately $463 million, which had been reduced by Northern Telecom sale proceeds of $38 million. The remaining $3 million of the $41 million sale proceeds was recognized in the accounts of one of the subsidiaries of the AGT Commission (post TELUS).

The following NovAtel reorganization chart shows how these assets and liabilities were allocated to subsidiary companies of the Alberta Government Telephones Commission.

NovAtel Communications Ltd.
Reorganization Chart



The approximate values of assets and liabilities obtained by the Province are subject to various sale closing adjustments and will be examined by my Office in future audits of the AGT Commission (post TELUS) subsidiary companies.

Conclusion

In January 1991, the Ministerial Task Force, when it had the responsibility for the management of NovAtel, turned to TELUS to run NovAtel as an immediate solution to the management crisis.

An alternative decision would have been to close down NovAtel's subscriber equipment business and to sell the systems business to Northern Telecom. Given the Task Force's unfamiliarity with NovAtel's operations, I believe that this would have been a difficult decision to make at that time. The Task Force could, however, have retained the services of a firm of corporate restructuring experts to quantify the problem and to help resolve it.

The complexity and seriousness of the situation took time and research to fully comprehend. By March of 1991, the annual financial statement audit for 1990 was completed and the magnitude of NovAtel's losses was known. Furthermore, at that time it was expected that large operating losses would continue throughout 1991.

I believe that the divestiture of NovAtel achieved in May 1992 could have been achieved in late 1991. To do this, the Ministerial Task Force and the Management Committee needed to understand that the subscriber equipment business had very little value. Mr. Pudwill's initial offer was higher than NovAtel's business operations by themselves were worth. It was natural for the Management Committee to attempt to complete a sale on the terms offered. However, given NovAtel's real value, the pursuit of Mr. Pudwill's first offer and the negotiations surrounding his second offer delayed the ultimate divestiture.

Internal and External Control Environment

PAGE

Control environment

The control environment is critical to a company's success. It can be defined as the collective effect of various factors designed to minimize risk and optimize the potential for success. Such factors include:

- The functioning of the board of directors
- Corporate strategy
- Management philosophy and operating style
- Management control and information systems

An effective board of directors is a fundamental part of the control environment. The board ultimately has control over the direction a corporation takes by setting corporate strategy, encouraging a particular management philosophy and operating style and overseeing all business activities.

Several studies of control environments associate business failure with the following:

- A lack of active board participation
- The lack of a broad base of executive skills
- The absence of a strong chief financial officer
- The same person acting as chairman and chief executive officer combined with a lack of active board participation
- An autocratic chief executive

Most of these characteristics were present at NovAtel prior to the involvement of the Management Committee in 1991.

The corporate objectives of a company are defined in very broad terms by the mandate of the organization. A company's strategy to achieve those objectives is defined in operational plans, both short and long-term.

NovAtel's Board of Directors defined the Company's mandate in 1983. It included the following:

- that a high technology systems business would be developed within the telecommunications industry,

- that growth would be accomplished both from within and through acquisitions, and

- that markets would be worldwide.

The Board intended to draw on AGT's and NOVA's technical and management expertise as necessary. Further the Board stipulated that the Company would establish its operational headquarters and technology base in Alberta.

Early in 1983, the Board recognized that there were several factors essential to success in a high technology industry:

- the ability to create and maintain an environment that would attract, motivate, grow and keep the required talent,

- the need for business plans would be vital, since the industry would be fast-paced, and competition would be fierce,

- the need to manage product obsolescence by being active and not reactive,

- the need for ongoing cost reductions, and

- the need to link general management with technology management.

As the rest of this section will demonstrate, these objectives were never met.

Boards of directors

Reporting relationships

From the time that the joint venture with NOVA was established until the privatization of AGT in 1990, NovAtel's management reported to the NovAtel Board of Directors. The NovAtel Board in turn reported to the AGT Commission. The Minister received regular communications from the Chairman of the Commission on AGT's operations. The Chairman viewed such reporting as being his responsibility. He felt it was counterproductive to have anyone else reporting to the Minister. Therefore, although the Deputy Minister of the Department of Technology, Research and Telecommunications was a member of the Commission, he did not report regularly to the Minister.

It should be noted that NovAtel management did not report to AGT management. The only involvement that AGT management did have in NovAtel was limited to accounting for NovAtel in AGT's annual financial statements and in facilitating financing for NovAtel.

<u>The NovAtel Board</u>

The NovAtel Board of Directors was established at the time AGT and NOVA entered into a joint venture agreement. During the time that NOVA was involved, NovAtel's Board consisted of the President and four members each from NOVA and the AGT Commission. The Board was chaired by a NOVA member until 1986. In 1986, an AGT member was appointed Chairman.

Following the acquisition by the AGT Commission in January 1989 of NOVA's interest in NovAtel, the Board was reconstituted. The new Board consisted of seven members, five of whom were also on the AGT Commission, one was from AGT senior management and the final member was the President of NovAtel.

During the period from 1985 to 1990, the Board had two full-time directors, being the Chairman and the President. The other members of the Board were non-executive directors.

With the exception of the President, members of NovAtel's Board did not have prior experience in electronics or manufacturing or the marketing of consumer products.

Divisions such as systems or subscriber equipment, or functions such as finance or marketing were not directly represented on the Board. Additionally, the Board did not request regular briefings from line managers at Board meetings.

Based on my review of Board minutes, and as confirmed by NovAtel's corporate secretary, there was little challenge by the part-time directors of many of the proposals made by the executive directors, being the Chairman and President.

Regarding the following matters, the views of the Chairman and the President were accepted and there is no evidence to suggest that their views were seriously challenged:

- the decision to make loans for license acquisitions
- the issue of control in the search for a partner following NOVA's departure
- the decisions to expand the Lethbridge plant and build the Cimplex plant in order to manufacture subscriber equipment rather than purchase components or products

- the six month forecast included in the TELUS prospectus
- the response to supply, production and quality problems
- the response to budget shortfalls, missed business plans and proposed action plans
- the response to high turnover of key staff
- the acquisition of the subsidiary - Simonsen

The AGT Commission (AGT's Board of Directors)

In 1983, the AGT Act was amended to allow the Lieutenant Governor in Council to appoint a full time Chairman from the public to the Commission. A former Deputy Minister of Executive Council was appointed to this position. The government was represented by the Deputy Minister of Utilities and Telephones, and the Deputy Provincial Treasurer. There were five representatives from AGT management, including the President of AGT, and the Vice Presidents of Finance, Operations, Corporate Planning, and Marketing. There were four public members on the Commission to represent the northern and southern regions of the Province, and the two main urban centres, Edmonton and Calgary.

The representation of AGT management on the Commission was reduced to four members in 1984 and from 1986 on there was only one representative, being the President of AGT.

The AGT Commission had complete authority over AGT's internal operations, including the operations of subsidiary companies, within the limitations of the financial and personnel resources available.

None of the members of the Commission had previous experience in the manufacture and marketing of electronic products.

At every Commission meeting, a report on NovAtel was presented. The reports generally included a review of the current financial information, comparisons to budgets, and business strategy.

A review of the minutes of the Commission indicates that there was little debate and insufficient challenge regarding the provision of funds to NovAtel for such matters as:

- budget shortfalls as a result of supply, production, quality and marketing problems
- the expansion of the Lethbridge plant and building of the Cimplex plant in order to manufacture subscriber equipment rather than purchase products or components
- various acquisitions e.g. Carcom

Further, as the evidence shows elsewhere in this report, there was ineffective challenge of the following key matters:

- the purchase in 1989 of NOVA's interest in NovAtel
- the issue of control in the search for a partner following NOVA's departure
- the decision to make loans for license acquisitions

I have been informed through interviews with Commission members that the lack of debate was a product of their belief that these matters had been fully debated and challenged at NovAtel Board meetings.

The TELUS Board

The TELUS Board of Directors in effect replaced the AGT Commission. Its members consisted of the AGT Commission at the time of privatization, plus four new members.

On November 29, 1990, following an investigation into the error in the TELUS prospectus, the TELUS Board dismissed the Chairman and CEO, the President and COO, and the Vice President and Group Controller of NovAtel. The TELUS Board appointed the TELUS Executive Vice President, Corporate Development as Managing Director of NovAtel. He in effect replaced the NovAtel Board and reported directly to the President and CEO of TELUS.

Management Committee

The composition and functioning of the Management Committee is discussed in section 9 - the Divestiture of NovAtel.

NovAtel's corporate strategy

Strategic planning

Internal audit reports on NovAtel provided to Board members as well as to management of NovAtel and AGT in each year 1987 through to 1990 (and also to NOVA in 1987 and 1988), noted that NovAtel lacked strategic direction.

In both 1987 and 1988 it was recommended that corporate planning be strengthened and that a long-range strategic plan be formalized to provide management with the needed support to plan effectively.

Arthur D. Little, Inc. in 1988 identified the U.S. market as a key to NovAtel's future and cautioned that there was as yet no evidence of a long-term marketing plan.

In 1989, although internal audit acknowledged that improvements had been made, strategic planning was still identified as a significant weakness.

"However, operating standard and internal control weaknesses still exist in many areas and these are hurting the Company's chances of becoming consistently profitable in the rapidly expanding and highly competitive market place. In particular, the lack of long-term strategic plans, delays in the introduction of new products, and constantly changing production schedules are all detrimental to sustained growth and profitability. Projected profits for 1989 may not be achievable if these weaknesses are not addressed."

In 1990 internal audit reviewed the operations of Carcom and recommended that a re-examination of goals and targets was needed to ensure appropriate focus and consistency with available resources and the needs of the market.

NovAtel throughout its history created a number of strategic plans. However, for nearly every year these plans were not implemented successfully.

Marketing

Based on my review of various reports, NovAtel was focused on technology with little customer orientation. The Company did not have a strong marketing infrastructure, senior head office executives avoided direct contact with customers, and marketing did not drive research and development or product development processes.

NovAtel placed strong emphasis on market share for subscriber equipment. NovAtel had a strong belief that large volumes were necessary to drive unit costs down. Following significant product failures in early 1987, NovAtel used low prices as a means of offsetting the effects of quality problems. In other words, to recover declines in market share caused by poor quality, selling prices were reduced. As a result of these pricing practices, NovAtel developed a reputation as a low-end/low-quality supplier. NovAtel's position as a low-price supplier prevented the Company from introducing higher margin, more up-scale products. Higher priced, better margin products can only be sold by a supplier who has a reputation for quality.

Reports that I have reviewed indicate that staff suggested that NovAtel's marketing function had little time to deal with anything other than customer complaints. There were insufficient marketing resources and market/customer research was underfunded.

Human resources

NovAtel had significant turnover of key staff. Internal audit consistently identified organizational controls that needed strengthening.

In February 1987, internal audit recommended "Organizational controls be strengthened by realigning conflicting reporting relationships, filling vacant positions (e.g. Vice President of Finance),..."

In January 1988, internal audit noted "...... a high turnover at all staff levels and inability to fill manpower requirements." Staff turnover continued.

NovAtel's management philosophy and operating style

Competitiveness

AGT internal audit reports on NovAtel prepared in 1987, 1988, 1989 and 1990, and a Management Assessment completed by The Coopers & Lybrand Consulting Group in 1991, collectively identified:

- conflicting reporting relationships,
- unclear mandates and responsibilities,
- significant rivalry between departments and between senior executives,
- manufacturing, finance, sales and marketing operated somewhat autonomously, often without a full understanding of each other's objectives, activities and progress toward the Company's targets, and
- senior staff did not go out of their way to solicit input from employees.

It was not until January of 1991, under the Management Committee, that NovAtel employees perceived that there was an "open door" policy at the top of the organization.

Technology focus

Research into new products was seen as a solution to the Company's problems. Senior management had a record of introducing many new ideas, products, and technologies regularly - yet with little customer input, few market assessments and few controls on the product development process. NovAtel's Research and Development function lacked a strong sense of direction. The lack of focus on priority projects reduced productivity and the potential for profits.

In 1989, The Coopers & Lybrand Consulting Group conducted a Total Quality Control audit. In summary, the audit revealed that NovAtel did not have an overall design control process, there was no mechanism in place to track engineering change orders, there was no control over product testing, and priorities of various research and development activities were not established.

Senior Management

Senior management from 1983 until 1990 has been characterized by the employees of NovAtel as having unwarranted and unrealistic optimism.

The President from May 1985 until June 1990 managed with a view to increasing sales. Managing for profitability was never viewed as a priority at NovAtel. The management style was often characterized as management by intimidation. I have been informed that the President discouraged NovAtel staff from discussing matters with the Chairman or other Board members. The President insisted that all communication be channelled through him.

Although NovAtel had a Controller, it did not have a Chief Financial Officer (CFO) from September 1985 until January 1987 and from January 1989 to March 1991. An effective CFO would have helped to ensure that a reliable forecasting process was established.

Marketing management lacked in-depth experience of consumer electronic products. There was no organized marketing research function. Further, Board minutes indicated that NovAtel did not have a Vice President of Terminals and Marketing in the key period 1989 through 1990.

NovAtel's management control and information systems

The CICA Handbook states that internal control systems consist of policies and procedures established by management to assist in assuring that the corporation achieves its targets. Specific objectives would include ensuring optimal use of resources, preventing and detecting fraud, safeguarding assets, and reliable and timely financial information.

The various reports that I have reviewed from internal auditors and consultants indicate significant chronic weaknesses in several vital management control and reporting practices. NovAtel did not have systems:

- to ensure the proper valuation of inventory through the evaluation of cost, age and obsolescence,
- to adequately determine product costs and margins,
- to control product selling prices and discounts,
- to effectively allocate research and development costs to products,
- to provide appropriate analyses of warranty volumes, costs and claims,
- to ensure the quality of purchased components,
- to ensure finished product quality, and
- to evaluate or avoid doubtful accounts receivable.

NovAtel consistently failed to meet most of its sales and financial targets, resulting in a wide disparity between budgeted and actual results. A summary of the weaknesses in the budget and forecast systems can be found in section 6, Error in the TELUS Corporation Prospectus.

Conclusion

I believe that the lack of previous appropriate experience of NovAtel's Chairman and non-executive directors was a fundamental cause for NovAtel's operating losses. Based on my analysis of the functioning of the NovAtel Board, there was insufficient effective challenge and debate of key issues at the Board level to ensure appropriate decisions.

The evidence indicates that NovAtel's management control and information systems were grossly deficient in that they failed to keep pace with the Company's growth. I believe, however, that if an effective board had been in place, the deficiencies would have been identified and corrected promptly.

As the AGT Commission decided to delegate the decision making regarding NovAtel's operations to the NovAtel Board, it should, as a minimum, have ensured that the Board members had the necessary expertise. To have a meaningful accountability relationship, it would have been better if the NovAtel Board had been at arm's length from the AGT Commission. The fact that up to five of the NovAtel Board members were also members of the AGT Commission hindered effective challenge of the recommendations made by the NovAtel Board.

The AGT Act provided the AGT Commission with full authority and responsibility for AGT's operations, including subsidiary companies. However, I believe that the government should have ensured that the Commission had appointed directors with the necessary skills to the NovAtel Board. Also, I believe that the government and the AGT Commission should have recognized that the overlapping membership on the NovAtel Board and the Commission was not conducive to meaningful accountability.

NovAtel's Effect on the Province's Financial Position

Loss to the Province

My terms of reference require that I report the effect of NovAtel on the Province's financial position.

I have interpreted this to mean that I should quantify the net financial amount relating to NovAtel that has been or will be recorded as net expenditure in the consolidated financial statements of the Province. I refer to this amount as the loss to the Province.

I have estimated the loss to the Province from its involvement in NovAtel to be in a range from $544 million to $614 million.

As discussed below, the net liabilities assumed by the Province on May 29, 1992, and used in the computation of the loss, have not yet been audited.

None of the figures have been discounted for the time value of money. Likewise, the cost of interest on borrowings to finance the loss has not been included.

The largest component of the loss is the cumulative operating losses of NovAtel. On page 118, I have included a summary of NovAtel's audited financial results from 1983 to 1991.

My calculation of the loss is similar in amount to the $566 million loss calculation made by the government and announced on May 21, 1992. From a discussion with the Chairman of the Management Committee, I understand that the government's calculation of the loss was based on estimates of the cash payments made, and to be made from the General Revenue Fund, that relate to the NovAtel loss. My computation of the loss is based primarily on NovAtel's operating losses from January 1, 1983.

Loss computation

	Millions
Operating losses of NovAtel to December 31, 1991 (page 112)	$484.4
Losses of NovAtel in five month period to May 29, 1992, including losses arising on divestiture (page 113)	116.6
Excess of book value of net assets acquired from NOVA over purchase price (page 114)	(6.7)
Payment to TELUS under Management Agreement (page 114)	9.5
	$603.8

	Low estimate of loss	High estimate of loss
As above	$603.8	$603.8
Future profits and losses		
Telexel earnout (page 114)	(20.0)	0.0
Future profit or loss on loans (page 114)	(40.0)	10.0
	$543.8	$613.8
Rounded to	$544.0	$614.0

Reacquisition of NovAtel from TELUS (page 115)

Operating losses of NovAtel to December 31, 1991

		Millions
Joint venture with NOVA		
1983	$ 11.3	
1984	43.6	
1985	36.8	
		$ 91.7
Joint ownership with NOVA		
1986	18.7	
1987	30.6	
1988	7.7	
		57.0
		148.7
Less: NOVA's share		62.3
		86.4
Sole ownership		
1989	3.7	
1990	203.9	
1991	190.4	
		398.0
Total audited operating losses to December 31, 1991		$484.4
Net losses per summary of financial results from 1983 to 1991 (page 118)		$546.7
Less: NOVA's share of losses as above		62.3
		$484.4

The annual operating loss figures which I have used come directly from NovAtel's financial statements. In the early years, I have used the financial statements of the AGT Commission's joint venture with NOVA.

The financial statements have been restated to reflect changes in accounting policies that took place. The most significant of these changes was implemented in 1989 and affected all previous years. Research and Development costs of $24.0 million had to that point been capitalized and amortized. In 1989, the decision was taken to expense the $24.0 million, and all future Research and Development costs. In deducting NOVA's share of the losses, allowance has been made for the fact that NOVA did not share in the restatement of $24.0 million that occurred in 1989.

Losses of NovAtel in five month period to May 29, 1992, including losses arising on divestiture

	Millions
Net liabilities assumed by the Province after divestiture (unaudited)	$244.1
NovAtel's net liabilities on December 31, 1991 (audited)	127.5
Total unaudited loss in period	$116.6

The net liabilities (unaudited) assumed by the Province are broken down as follows:

Bank indebtedness	$463.2
Loans made by NovAtel	(208.3)
Land and buildings	(17.8)
Other assets	(43.3)
Other liabilities	50.3
	$244.1

The assets and liabilities which the Province sold yielded $41 million. Of these funds, $38 million was applied to reduce the bank debt of NovAtel and is thereby recognized as a decrease in the net liabilities assumed by the Province. The remaining $3 million was recognized in the accounts of one of the subsidiaries of the AGT Commission (post TELUS) thereby further decreasing the net liabilities assumed by the Province.

Inasmuch as the net liabilities at December 31, 1991 were less than the net liabilities assumed by the Province at May 29, 1992, a loss was realized.

The net liabilities assumed by the Province through subsidiary companies of the AGT Commission (post TELUS) will be audited by my Office in due course.

Excess of book value of net assets acquired from NOVA over purchase price

On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel for $42.5 million. Under the terms of the transfer agreement, AGT acquired net assets amounting to $8.0 million and NOVA's shareholder's advances in the amount of $41.2 million for the payment of $42.5 million. As a result, the excess of book value of net assets acquired over the purchase price was $6.7 million.

Payment to TELUS under Management Agreement

Under the terms of the Management Agreement signed with TELUS in January 1991, which was for a maximum of two years, TELUS was entitled to a maximum fee of $15 million. In addition TELUS was entitled to the expenses related to its employees assigned to NovAtel.

The total amount paid by the government to TELUS relating to the Agreement was $9.5 million.

Telexel earnout

Under the sale agreement, Telexel is committed to paying the Province the larger of either $20 million, or 20% of the Company's net income over the next five years. I have included $20 million as a loss reduction in my low estimate of the loss to the Province. On the basis that I cannot predict the amount that will be paid by Telexel in connection with the Province's share of that Company's future profits, I have not reduced my high estimate of the loss with respect to this earnout.

Future profit or loss on loans

On page 78, I show that the value placed on the loan portfolio at May 29, 1992, is $208.3 million. This value is net of an allowance for loan losses. Depending on future events, it is possible that the loan loss allowance will prove to be greater than necessary. For my low estimate of the loss to the Province, I have said that there is a possibility of recovering $40 million more than I currently believe is probable. Conversely, there is a possibility that losses will be incurred on loan payments that were contracted to be made as at May 29, 1992. I have included $10 million for this eventuality in my high estimate of the loss.

Reacquisition of NovAtel from TELUS

Following discovery of the error in the final TELUS prospectus, the government decided to provide prospective shareholders with certain indemnities in an amended prospectus. These indemnities made good the potential values associated with NovAtel contained in the final prospectus. The indemnities provided by the government were as follows:

- If the actual net income of NovAtel for the period July 1, 1990, to December 31, 1990, was less than the previously forecasted $16.9 million net income of NovAtel for such period, the government would compensate NovAtel by payment of an amount equal to the deficiency.

- TELUS had an option to sell a 50% interest in NovAtel to the government at an option price equal to 50% of the net book value of NovAtel as at September 30, 1990, plus the forecasted earnings of $16.9 million.

- TELUS had an option to sell a 50% interest in NovAtel to the government at the option price plus $50 million, in the event that the proposed sale to Bosch did not proceed.

The government indemnities were honoured effective December 31, 1990. The indemnity for the operating losses of NovAtel in the period of TELUS' ownership has been included in the operating losses shown on page 112. The balance of the indemnities was as follows:

	Millions
Bosch indemnity	$ 50.0
Difference between NovAtel's option price net asset values, and actual net asset values at September 30, 1990	46.5
	96.5
Goodwill written off by the AGT Commission (post TELUS) following the reacquisition of NovAtel, per the Public Accounts of Alberta, 1990-91, page 7.43	
Portion of profit indemnity attributed to period of TELUS' ownership of NovAtel (October 4 to December 31, 1990), per the Public Accounts of Alberta, 1990-91, page 7.42	11.0
	$107.5

I have not included the amount of $107.5 million in my computation of the loss to the Province. At the time the amended prospectus was released, the indemnities that gave rise to the $107.5 million were in place and prospective shareholders would have been prepared to pay at least that amount, if not more, for NovAtel.

The unaudited value of TELUS' equity investment in NovAtel at May 31, 1990, was $105.4 million per the final prospectus. Additionally, prospective shareholders knew from the amended prospectus that the Bosch premium of $50 million, and the forecasted earnings of $16.9 million, were indemnified by the Province. Therefore, the share sale proceeds reflected a value for NovAtel of at least $107.5 million.

The share sale proceeds were largely accounted for in the Alberta Heritage Savings Trust Fund in the year to March 31, 1991 (see Schedule 3 (a), Public Accounts of Alberta, 1990-91, page 5.38). In other words, when the indemnities were paid to TELUS, no loss was incurred because the Province was merely returning to the shareholders what it had received in share sale proceeds. To the extent that the Province was a shareholder in TELUS, the indemnity payments were paid to itself.

Other effects on the Province

I have not considered, nor quantified, the effect of any of the following matters in my computation of the loss to the Province. I feel that these matters are not within the terms of reference for this report. There are other professionals better qualified to study these areas and make judgements as to the effect on the financial position of the Province.

NovAtel encouraged the development of a high-tech telecommunications industry within Alberta. In support of this industry, NovAtel developed sophisticated research and development technologies within the Province which might otherwise not have evolved. These research and technological developments are preserved through the continued participation of Northern Telecom in the Province's economy. Also, because NovAtel operated in the Province and offered support for other high-tech endeavours, related industries located or were developed here.

As a result of the sale of the Company, other industry has been drawn into the Province. Telexel's plans include the relocation of its battery manufacturing business to Alberta, while Northern Telecom is committed to establishing both a research and a manufacturing centre in Calgary.

As a result of the economic activity generated by NovAtel, there has been both a direct and an indirect impact on job creation in the Province. In September 1990, the Company employed 1,450 people in Alberta. As a result governments at all three levels have benefited from the increased tax base. This tax base includes property taxes paid by the Company, and income and community taxes paid by the employees. On the other hand, NovAtel has cost the Province in real financial terms. The money that was invested cannot now be recovered. As well, those funds spent on NovAtel were not available for other government projects.

NOVATEL COMMUNICATIONS LTD.

SUMMARY OF AUDITED FINANCIAL RESULTS FROM 1983 TO 1991
(thousands of dollars)

	1983 *	1984 *	1985 *	1986	1987	1988	1989	1990	1991	Total
SALES										
Subscriber	$15,176	$23,866	$22,227	$ 83,566	$ 86,371	$106,717	$192,916	$185,587	$108,792	$825,218
Systems	-	-	26,567	19,723	54,135	30,185	74,749	92,250	107,541	405,150
Service	-	-	635	2,697	5,285	6,469	4,505	-	-	19,591
Cantel/Ericsson margin	-	-	-	-	-	4,230	8,138	6,751	2,360	21,479
Other	617	-	-	-	-	3,245	1,643	412	669	6,586
	15,793	23,866	49,429	105,986	145,791	150,846	281,951	285,000	219,362	1,278,024
COST OF SALES										
Subscriber	11,603	16,917	21,415	61,925	52,632	81,963	173,067	190,086	128,732	738,340
Systems	-	-	20,915	15,928	43,367	17,967	41,959	57,166	65,063	262,365
Service	-	-	458	781	3,607	4,541	4,920	-	-	14,307
Inventory provision	-	-	14,187	5,700	4,400	2,106	2,616	33,920	24,516	87,445
Warranty	-	-	-	1,764	11,521	2,456	4,786	17,940	8,218	46,685
Other	-	-	-	2,070	-	922	390	115	312	3,809
	11,603	16,917	56,975	88,168	115,527	109,955	227,738	299,227	226,841	1,152,951
GROSS PROFIT (LOSS)	4,190	6,949	(7,546)	17,818	30,264	40,891	54,213	(14,227)	(7,479)	125,073
EXPENSES										
Selling and marketing	5,555	9,604	11,685	17,337	14,669	16,471	21,213	35,299	24,403	156,236
Research and development	4,942	9,305	8,360	(138)	17,079	13,274	19,409	40,909	28,320	141,460
General and administration	5,010	7,253	8,607	6,135	14,746	11,703	14,901	34,511	31,596	134,462
Loan loss provision	-	-	-	-	-	-	-	34,209	17,462	51,671
Write down of fixed assets to net realizable value	-	-	-	-	-	-	-	-	9,569	9,569
	15,507	26,162	28,652	23,334	46,494	41,448	55,523	144,928	111,350	493,398
OTHER INCOME AND EXPENSES										
License fee	-	-	-	1,888	2,883	2,821	137	-	-	7,729
Interest	-	-	-	1,109	2,597	2,622	9,441	25,870	34,265	75,904
Interest income	-	-	-	(344)	(293)	(1,158)	(1,669)	(4,533)	(2,094)	(10,091)
Foreign currency loss (gain)	-	-	-	924	405	1,339	(849)	1,518	1,683	5,020
Amortization of goodwill	-	-	-	-	-	593	1,777	15,398	-	17,768
Loss (gain) on rental units	-	-	-	-	1,044	(1,654)	(123)	-	-	(733)
Severance and relocation	-	-	-	-	-	-	-	-	6,228	6,228
Write off of idle assets	-	-	-	-	-	-	-	-	6,500	6,500
Write off of start up costs	-	-	-	-	-	-	-	-	834	834
Provision for closures	-	-	-	-	-	-	-	-	10,400	10,400
Loss on purchase commitments	-	-	-	-	-	-	-	-	4,911	4,911
Professional fees	-	-	-	-	-	-	-	-	6,208	6,208
Royalties	-	-	-	-	-	-	-	-	756	756
General resizing	-	-	-	-	-	-	-	-	730	730
Other expense (income)	-	-	-	(147)	(352)	90	(1,177)	5,504	1,184	5,102
	-	-	-	3,430	6,284	4,653	7,537	43,757	71,605	137,266
TOTAL EXPENSES	15,507	26,162	28,652	26,764	52,778	46,101	63,060	188,685	182,955	630,664
Loss before taxes, minority interest and extraordinary items	11,317	19,213	36,198	8,946	22,514	5,210	8,847	202,912	190,434	505,591
Income tax (recovery)	-	-	-	5,557	5,403	1,112	(5,191)	1,023	-	7,904
Minority interest	(34)	(88)	610	2,614	3,272	1,354	-	-	-	7,728
Extraordinary item	-	24,525	-	1,577	(605)	-	-	-	-	25,497
NET LOSS FOR THE YEAR	$11,283	$43,650	$36,808	$ 18,694	$ 30,584	$ 7,676	$ 3,656	$203,935	$190,434	$546,720

*NOVA/AGT Joint Venture

Key Events

1983	On January 1, 1983, NovAtel Communications Ltd. commenced operations as a joint venture between The Alberta Government Telephones Commission and NOVA.
1987	On March 27, 1987, NovAtel management informed the NovAtel Board that to establish a strong presence in the U.S. cellular systems market, NovAtel would need to provide financing to license holders. On that same date, the NovAtel Board encouraged management to seek external financing arrangements to support NovAtel's systems sales in the U.S.
	On July 31, 1987, the NovAtel Board authorized the first financing of systems sales to MSA license holders.
	The lottery process for MSA licenses was completed in 1987. Having issued the MSA licenses, the FCC started the process for the issue of RSA licenses.
1988	On June 27, 1988, the Chairman of NovAtel explained to the AGT Commission that to be successful in the RSA markets, NovAtel needed to issue undertakings to provide financing to RSA license applicants. These undertakings would be in the form of commitment letters. The AGT Commission decided that if NovAtel was unable to enter into an external financing arrangement with an investment firm, the Commission would loan NovAtel up to U.S. $100 million. The Commission understood that, if necessary NOVA would also provide up to U.S. $100 million.
	In June 1988, NovAtel issued its first commitment letter to an applicant in the RSA license lottery.
	By August 31, 1988, NovAtel had issued over 300 commitment letters.
	In August 1988, NOVA informed the AGT Commission of its intent to sell its 50% share of NovAtel.
	In October of 1988, the AGT Commission decided to acquire NOVA's entire interest in NovAtel.
1989	On January 18, 1989, the AGT Commission acquired NOVA's interest in NovAtel for $42.5 million.
	On April 19, 1989, the AGT Commission authorized the guarantee of bank loans to NovAtel up to an amount of U.S. $340 million, subject to government approval. This action was necessary in order to demonstrate to the FCC that NovAtel had the financial ability to support its commitment letters.

On June 26, 1989, the NovAtel Board was made aware that Bosch, a potential strategic partner, was clearly looking for control of NovAtel, was considering making Calgary the centre for its worldwide cellular business, and intended to finalize the acquisition by the end of 1989.

On August 10, 1989, an Order in Council authorized the AGT Commission to guarantee loans to NovAtel up to U.S. $340 million.

On November 17, 1989, the Chairman of NovAtel informed the NovAtel Board that an offer by Motorola to finance the acquisition of licenses by General Cellular Corporation could jeopardize NovAtel's systems sales in the U.S.

On November 29, 1989, the NovAtel Board approved a loan to General Cellular Corporation of up to U.S. $81 million.

The FCC awarded the final RSA licenses in December 1989.

1990

On January 24, 1990, the NovAtel Board approved a loan of up to U.S. $39 million to S & P Cellular Holdings Inc., and up to U.S. $81 million to Consolidated Cellular Communications Corporation (CCCC). Funds were to be advanced to CCCC as the U.S. $39 million was repaid. No funds were ever advanced to CCCC.

On February 28, 1990, the NovAtel Board approved a loan of up to U.S. $108 million to Cellular Information Systems Inc. The loan approval was subsequently reduced to U.S. $60 million.

In June 1990, the first RSA loan agreement was completed.

On July 5, 1990, the Alberta Government Telephones Reorganization Act received royal assent. The Act's purpose was to effect the privatization of AGT's telecommunications business.

On July 24, 1990, a sale agreement was reached between Bosch and the AGT Commission. The proposed closing date was October 1, 1990.

On August 7, 1990, the preliminary prospectus was filed with the Alberta Securities Commission.

On September 10, 1990, the final prospectus was approved by the TELUS Board of Directors. On the same date an underwriters' final due diligence meeting was held.

On September 11, 1990, the final prospectus offering the common shares of TELUS Corporation was filed with the Alberta Securities Commission.

On September 18, 1990, eight days after signing the prospectus, the Chairman of NovAtel informed TELUS management that the NovAtel earnings forecast covering the last six months of 1990 would not be met.

On September 23, 1990, an amended prospectus for the sale of TELUS shares was filed with the Alberta Securities Commission.

On September 24, 1990, Bosch wrote to the President of AGT expressing concern that certain terms and conditions contemplated in the sale agreement could not be performed or complied with.

On October 4, 1990, TELUS acquired all of the business and assets of the AGT Commission, including NovAtel.

On November 29, 1990, as a result of an investigation into the error in the prospectus, TELUS dismissed NovAtel's top three executives.

On November 29, 1990, Bosch advised TELUS that it would not be proceeding with the purchase of an interest in NovAtel and all negotiations would be terminated.

In early December 1990, a Ministerial Task Force was formed to examine the likelihood of TELUS exercising its right to sell NovAtel back to the Province.

On December 31, 1990, TELUS exercised its right, described in the amended prospectus, to sell NovAtel to the Province.

1991

On January 11, 1991, by Order in Council, the Province was authorized to guarantee NovAtel's indebtedness to a maximum amount of $525 million.

On January 17, 1991, the Province, through the AGT Commission (post TELUS), purchased NovAtel from TELUS for $159.4 million. On the same date, a Management Agreement gave TELUS the responsibility to manage NovAtel for a fee of $15 million over two years. As a result of this Agreement, a Management Committee was formed which first met on January 29, 1991.

On March 13, 1991, NovAtel's 1990 loss of $203.9 million was announced.

On March 15, 1991, NovAtel laid off 222 employees, reducing the workforce from 1890 to 1668.

On May 1, 1991, NovAtel laid off 340 employees, further reducing the workforce. Additionally, plans to open the Calgary Cimplex plan were abandoned.

On June 17, 1991, the Management Committee approved the restructuring of the GCC loan.

On September 13, 1991, Mr. Pudwill signed a letter of intent to purchase NovAtel, except for the outstanding loans.

On December 18, 1991, discussion of Mr. Pudwill's first proposal was called off.

1992

On January 14, 1992, Northern Telecom reiterated an offer to purchase the systems business of NovAtel.

On February 6, 1992, the Management Committee listened to and assessed a purchase proposal from Northern Telecom and a second purchase proposal from Mr. Pudwill.

On April 22, 1992, the Management Committee approved a restructuring of the loan to Cellular Information Systems Inc.

On April 24, 1992, the Management Committee recommended that the government accept the offer submitted by Northern Telecom and a third offer from Mr. Pudwill through his Company, Telexel Holding Limited.

On May 21, 1992, the government announced the divestiture of NovAtel.

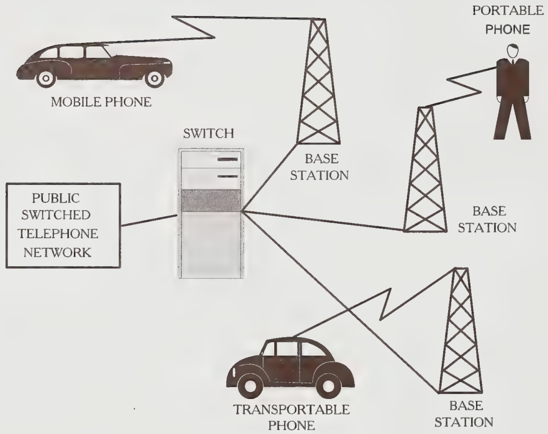
On May 29, 1992, North West Trust Company was given the responsibility to manage NovAtel's loan portfolio.

The Cellular Industry

Introduction

Technology

Cellular technology combines radios and the conventional telephone network to allow subscribers to communicate with either cellular or regular telephones. The following illustrates a cellular network.



There are two main components needed in a cellular network, subscriber equipment and systems equipment.

Subscriber equipment includes:

- mobile, or car cellular telephones, which are installed in cars or trucks and draw their power from the vehicles' batteries. They have an external antenna, and usually transmit with three watts of power.

- transportable cellular telephones, which can be removed from the car and used by themselves with attached battery packs. They usually transmit with three watts of power.

- portable cellular telephones, which are self-contained and can be carried in a suit pocket, or purse. They normally have built in antennae, rechargeable batteries, and transmit with six tenths of one watt of power.

The systems equipment consists of base station radio equipment and switching equipment. Each base station is located in a cell and uses a radio to communicate with many subscribers. Within an area, there will be many base stations, all connected to a switch. Each base station consists of a low-power transmitter and a receiver. Because the transmitter operates at low power, non-adjacent cells can use the same radio frequency without interference. This allows a few radio frequencies to serve many subscribers. As a subscriber travels from one cell to another, the radio signals between the subscriber and the base station will weaken. The system will then automatically hand the subscriber to a new cell which is receiving a stronger signal from the subscriber.

The switch is the heart of the cellular systems equipment. It coordinates all originating, processing and terminating of calls. In cooperation with the base stations, the switch will move subscribers from one base station to another. It also collects data and billing information and sends it to a central site for storage and processing.

The switch also connects to the public switched telephone network. This permits the subscriber to call, or be called from, the public telephone network. In Alberta, the public switched telephone network includes the telephone networks operated by Edmonton Telephones and AGT. In Ontario, it would include Bell Canada.

AT&T developed the concept for today's cellular systems in the late 1940s. However, AT&T needed improved electronic switching equipment and radio equipment as well as computer technology to turn the theory into a viable product. Disputes over regulations, specifications and technical issues also prevented significant development of the industry until the 1980s when the U.S. adopted the Advanced Mobile Phone Service (AMPS) standard.

Cellular development

Canada

By 1982, Alberta Government Telephones had developed extensive leading edge experience in providing radio-telephone service. Based on this experience, AGT and NOVA formed NovAtel to further develop this technology. In 1983, AGT contracted with NovAtel for the first cellular network in North America. This service became available in 1983 in Edmonton and Calgary.

There are now two competing networks in Canada, Cellnet and Cantel. Cellnet is operated by the telephone networks who cooperatively operate one cellular network. They have adopted standards that allow a subscriber in one area to use the services in another area. For example, subscribers from Edmonton travelling to Ontario would be able to use the cellular services available in Saskatchewan, Manitoba and Ontario. Cantel is the other national operator in Canada.

United States

In the U.S., the Federal Communication Commission evaluated alternative licensing approaches for cellular services. In the early 1980s, the FCC determined that it would license two competing cellular system operators in each geographic area. One company would be the wireline operator, being a public switched telephone company. The other company would be a non-wireline operator.

The FCC lotteries

The FCC licensed Metropolitan Statistical Service Areas (MSAs) and Rural Service Areas (RSAs). It decided that it would license the 305 MSAs first as they were more densely populated. The FCC

awarded some of the first licenses after holding comparative hearings. However, this proved to take longer than expected. The FCC decided that due to the large number of interested applicants and the considerable time needed to assess each applicant, it would hold a lottery for the remaining licenses. By 1988, the FCC had awarded the 610 licenses in the 305 MSAs.

To qualify for a license, each applicant had to demonstrate the financial capacity to purchase the necessary systems equipment and infrastructure. In addition, the applicant had to have sufficient working capital to finance the cellular company until it became profitable. This could take several years as the applicant had to build the system, and also had to attract subscribers. Initial capital costs to do this typically varied from $1 million to $13 million, depending on market size.

In 1988, the FCC began the lottery of licenses in the 428 RSAs. RSAs were usually larger in geographic size but smaller in population than MSAs. For the RSA lottery, the FCC received thousands of applications. The potential profit to be made from winning a license in the cellular lotteries attracted a large number of speculators. These speculators did not plan to build a cellular system but planned to profit by selling the license to another company.

Europe

In Europe, the Scandinavian countries were early pioneers and launched cellular systems in the early 1980s. These countries adopted the Nordic Mobile Telephone (NMT) standard. Most other European countries established cellular networks in 1985 and 1986. Great Britain adopted the Total Access Communications System standard.

Worldwide

Internationally, there are about 15 million cellular subscribers, with North America accounting for 50%, Europe 40%, and the remaining 10% in Japan and Australia.

By August 1991, the U.S. market had grown to over 1,000 operational cellular systems. Subscribers to these systems had reached 2.3 million by 1991.

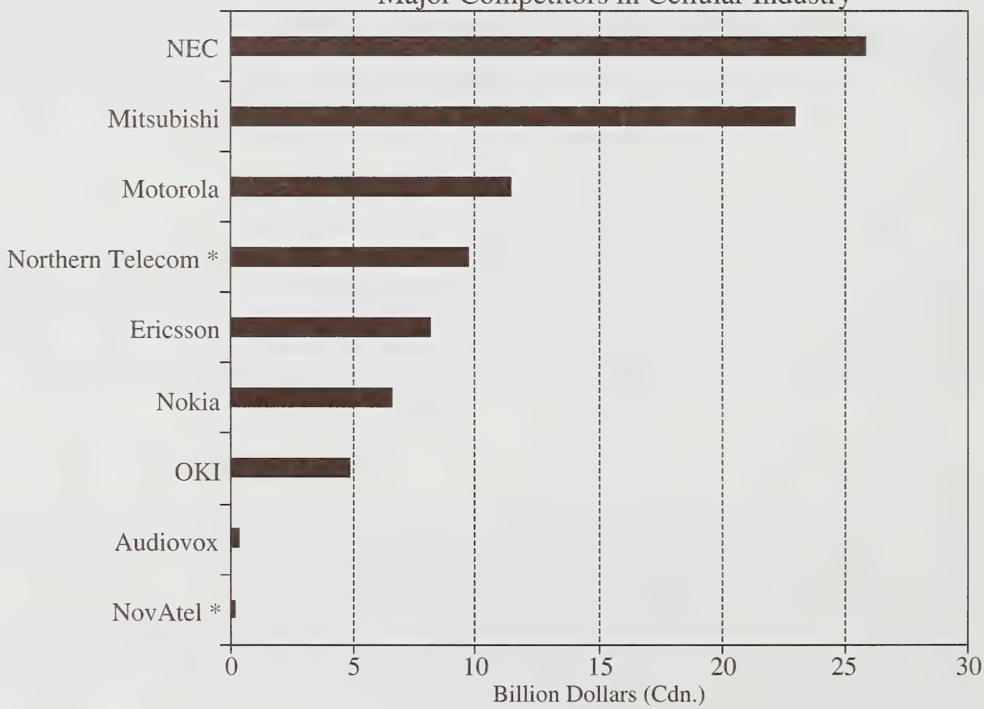
Cellular equipment manufacturers

Major manufacturers

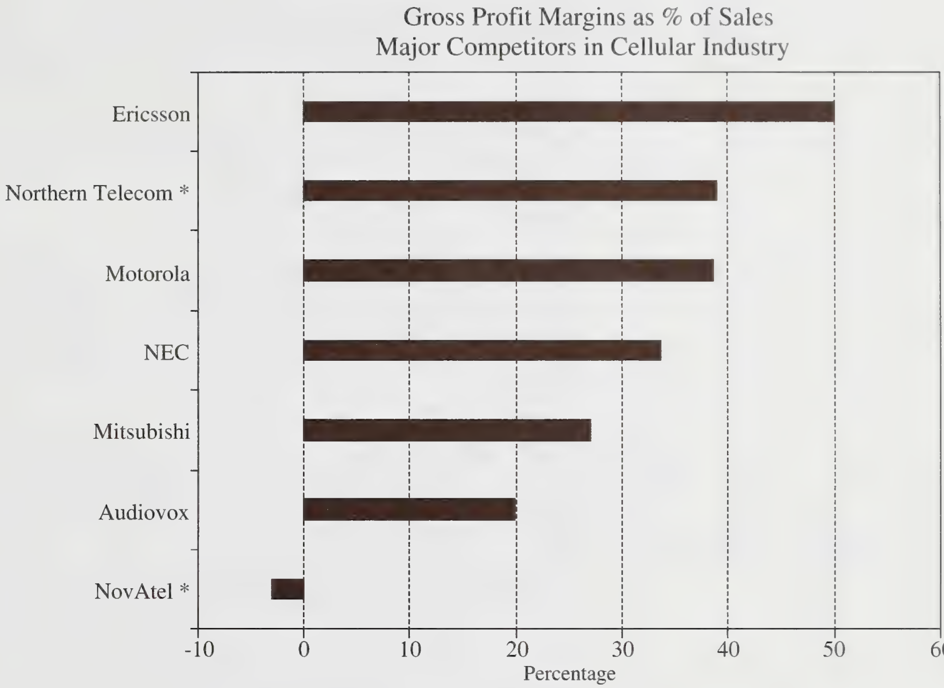
Most of the major manufacturers of cellular systems and subscriber equipment are large, highly diversified and integrated organizations. Typically, these organizations derive between 25% and 60% of their business from telecommunications. The rest of their business includes information systems, automobile accessories, heavy machinery and electronic defense systems. By contrast, NovAtel was a Company devoted exclusively to the manufacture of cellular systems and subscriber equipment.

The following charts show the total revenues from all sources and aggregate gross profit margins of the major competitors in the cellular industry.

Revenues
Major Competitors in Cellular Industry



Source: Company financial statements (1989/90) * 1991 numbers



Source: Company financial statements (1989/90) * 1991 numbers

Systems equipment

A limited number of companies dominate the cellular systems equipment business. Typically, these companies have capabilities in a variety of telecommunication and electronic industries and provide equipment on an international basis. Major competitors in North America include Motorola, Ericsson, AT&T and Northern Telecom.

In Canada, the public telephone companies have generally purchased equipment from Northern Telecom. By contrast, Cantel, a non-wireline operator, has purchased most of its equipment from Ericsson.

In the U.S., AT&T is a major supplier to the wireline operators given its historic relationship to the Bell telephone companies. In non-wireline MSA markets, Ericsson has achieved a dominant position. Motorola is strong in both wireline and non-wireline MSAs.

AT&T, Ericsson and Northern Telecom manufacture their own switch. Switches produced by these manufacturers have large capacity and are designed for highly-populated markets.

Motorola and NovAtel purchase their switch components. Motorola's switch is capable of servicing larger MSA markets. NovAtel's switch has less capacity and is appropriate for smaller markets. NovAtel's switch, when coupled with its base radio station equipment was suitable for the small MSAs and the RSAs.

NovAtel produced a high-quality cellular system at a lower cost than other companies. This competitive advantage led to NovAtel's success in the RSA market. In the RSA market in 1991, NovAtel achieved an overall 24% market share, second only to Motorola's 39% share. In fact, NovAtel had a 50% share of the non-wireline RSA market compared to Motorola's 29%, but Motorola had a much higher share of the wireline RSAs.

The following table shows the market share of major manufacturers in the RSA market. As not all RSAs were developed and operating at the time the information was collected, the total does not agree with the 856 licenses issued.

Systems Business - RSA Shares to Date
(as of June 15, 1991)

	Wireline		Non-Wireline		Aggregate	
	No. of Markets	% Share	No. of Markets	% Share	No. of Markets	% Share
NovAtel	49	14%	63	50%	112	24%
Motorola	147	43%	37	29%	184	39%
Northern Telecom	97	28%	6	5%	103	22%
Astronet	17	5%	3	2%	20	4%
Ericsson	0	0%	12	9%	12	3%
AT&T	36	10%	6	5%	42	8%
Plexsys	1	*	0	0%	1	*
Total	347	100%	127	100%	474	100%

* Less than 1%

Subscriber equipment

When manufacturers recognized the potential of the market for subscriber equipment, many large scale electronics manufacturers began to compete for market share in the mid 1980s. The market has grown at over 40% per year and over 25 manufacturers now compete for world sales. Competition has been fierce, to the extent that few, if any, manufacturers have made a profit selling subscriber equipment. The manufacturers apparently believe that, in time, the market will become profitable.

The subscriber equipment industry requires highly sophisticated manufacturing technologies to produce defect free quality and product miniaturization at ever decreasing production costs.

The price of subscriber equipment has decreased rapidly as sales volumes increased and competition intensified. For example, the wholesale price of mobile telephones declined from $800 in 1986 to about $200 in 1992. Similarly, the wholesale price of portable telephones declined from $675 in 1989, to about $300 in 1992. The industry has been able to reduce prices through increases in volume and through product miniaturization.

Very large scale circuit integration allows many functions to be compressed into small components that manufacturers can mass produce cheaply. However, technological changes occur rapidly. Often one manufacturer's competitive advantage is eroded by the research and development of others.

The following two charts show the market share for mobile/transportable cellular telephones and for portable cellular telephones. According to Herschel Shosteck Associates, in 1986 NovAtel held about 11% of the market for mobile/transportable telephones, compared to Motorola's 13% share. By 1991, NovAtel's market share for this type of equipment had declined to about 4%, while Motorola had increased its share to 26% of the market. For portable equipment, Motorola's market share rose from about 28% in 1987, to 49% in 1991. NovAtel entered the portable market in 1988, and although the Company achieved a 13% market share in 1989, its share rapidly declined to 1% in 1991.

The Market Share of Mobile/Transportables,
By Manufacturer,
1986 - 1991 [1]

Manufacturer	1986	1987	1988	1989	1990	1990/ 1991[2]
Motorola	13.1	10.8	13.2	16.1	24.5	25.6
Toshiba (Audiovox)	18.4	15.2	9.5	12.9	12.1	14.9
Matsushita	5.4	10.2	12.6	15.8	13.1	7.9
Technophone	0.0	0.0	0.0	0.4	8.3	7.6
Mitsubishi	7.9	11.0	10.8	13.3	9.3	7.2
Nokia - Mobira	0.0	9.8	6.6	2.1	2.8	5.8
Ericsson/General Elec.	6.7	4.8	3.6	2.5	2.9	5.3
Shintom	0.0	0.0	4.3	4.2	1.6	5.1
Uniden	0.0	4.7	10.6	9.4	7.3	4.5
OKI	11.3	10.9	6.8	6.4	4.7	3.8
NovAtel	10.9	5.6	2.4	7.7	4.1	3.6
NEC	7.7	9.2	8.7	4.2	3.8	3.4
Fujitsu	8.7	2.6	3.3	3.1	3.0	3.0
Goldstar	0.0	0.0	0.0	0.0	0.0	0.5
Clarion	0.0	0.0	0.0	0.1	0.2	0.1
Sun Moon Star	0.0	0.0	0.8	1.2	0.0	0.1
All others	9.2	3.1	2.0	0.6	2.5	1.8
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Total n	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

[1] From Figure 5.4 and earlier versions

[2] Average for four quarters, December, 1990 - September, 1991.

Source: Herschel Shosteck Associates
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The Market Share of Portables,
By Manufacturer,
1986 - 1991 [1]

Manufacturer	1986	1987	1988	1989	1990	1990/ 1991[2]
Motorola	40.0	28.3	30.1	34.9	50.3	48.8
Toshiba (Audiovox)	0.0	0.0	0.0	3.0	5.1	10.6
OKI	0.0	8.0	3.7	6.9	9.9	9.1
Mitsubishi	35.0	31.4	19.8	17.4	9.6	7.4
NEC	0.0	15.2	32.2	12.4	8.7	7.2
Matsushita	0.0	0.0	0.0	9.6	8.5	5.6
Fujitsu	0.0	0.0	0.0	0.2	1.3	3.8
Technophone	25.0	13.2	5.6	0.5	0.7	1.7
Uniden	0.0	0.0	0.0	0.0	1.3	1.6
Nokia - Mobira	0.0	0.0	0.0	0.8	1.1	1.4
Japan Radio Corp/NovAtel	0.0	0.0	3.3	12.9	1.4	1.0
Ericsson/General Electric	0.0	0.0	0.0	0.0	0.2	0.6
Sanyo	0.0	0.0	0.0	0.0	0.1	0.3
All others	0.0	3.8	5.4	1.5	1.8	1.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Total n	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

[1] From Figure 7.4 and earlier versions

[2] Average for December, 1990 - September, 1991.

Source: Herschel Shosteck Associates
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MAJOR MANUFACTURERS IN THE CELLULAR INDUSTRY

(All amounts in Canadian dollars)

COMPANY NAME	SALES	R & D	DESCRIPTION
Mitsubishi (1989)	$23 billion	$1.06 billion	Manufactures both systems and cellular equipment. Also heavy machinery, industrial products, consumer products, information and communication systems.
Motorola (1989)	$11.4 billion	$932 million	Highly integrated, both vertically and horizontally. Involved in communications, semi-conductor products, general systems.
Northern Telecom (1991)	$9.7 billion	$1.1 billion	Second largest manufacturer of telecommunications equipment in North America. Does not manufacture cellular telephones.
Ericsson (1990)	$8.2 billion	$902 million	The 1990 annual report states that it is the world leader in telephone systems with 40% of the market. Radio communications, business communications, public communications.
Audiovox (1989)	$348 million	N/A	Company has four product lines, cellular telephones (46%), auto sound (38%), auto accessories (15%) and consumer electronics (1%).
NovAtel (1991)	$219.4 million	$28 million	Manufacture and sale of both systems and subscriber equipment.

NovAtel's Businesses

Introduction

In order to give the reader an appreciation of the size of NovAtel's operations, the following table shows the number of people employed by the Company in the following locations:

	No. of Employees	
	Sept. 1990	May 1992
Calgary	858	486
Lethbridge	592	429
Toronto	12	-
Montreal	5	-
Fort Worth, Texas	161	177
Atlanta, Georgia	70	47
Norway	55	-
U.K.	22	-
	1,775	1,139

NovAtel had two primary businesses:

- the systems equipment business, and
- the subscriber equipment business.

NovAtel was a Company devoted exclusively to the manufacture of cellular systems and subscriber equipment. The manufacture of the two types of equipment was complementary in that both needed Research and Development into radio and switching technology and both needed very large-scale integration of electronic components. The following chart shows some of the more significant differences between the two complementary but different businesses.

THE TWO BUSINESSES

SYSTEMS BUSINESS	SUBSCRIBER BUSINESS
Limited number of potential customers	Distribution through a variety of channels - specialty electronic stores, retail outlets, automotive supply
Sales are by competitive bidding on individual projects	Channels of distribution are key to success
Low volumes with high profit margins	High volumes with limited profit margins
Financing important to securing sales in the U.S.	Financing not a competitive requirement
Few major competitors	Many competitors, with significant marketing and mass production experience
Customized and specialized software requirements	Products are similar regardless of manufacturer
Wireline RSA and MSA license holders inclined to acquire systems equipment from their traditional suppliers	Retailers will likely purchase from suppliers who provide reliable products at the least cost
Different protocols in different parts of the world, requiring sophisticated research and development to remain current internationally	Risk of technological obsolescence through competitive product improvement
Low volume warranty repairs	Need to manage high volume returns and warranty repairs
Expected move from analog to digital technology requiring investment in research and development	

This appendix describes NovAtel's systems equipment and subscriber equipment businesses. I have decided to present each business under the categories of design and development, production, and marketing and sales.

The description that follows, together with the Analysis of NovAtel's Results by Period at the end of this appendix, will show that the majority of NovAtel's operating losses were in the subscriber equipment business.

NovAtel's systems equipment business

Design and development

Two companies, Westech Systems of Edmonton and International Systcoms of Montreal had developed the AURORA (Automatic Roaming Radio) system. Their work resulted in the design of cellular systems equipment as well as mobile radio telephones. AGT and NOVA formed NovAtel to identify business opportunities for these products. In 1983, AGT contracted for NovAtel to supply cellular systems worth about $30 million. Thus, the AURORA technology was used for the first cellular systems installed in North America.

While NovAtel was an early pioneer of cellular systems, it was not until 1986 that it developed its first Advanced Mobile Phone Service (AMPS) systems and was able to begin marketing in the U.S. AMPS was the protocol adopted by U.S. cellular systems operators. At the same time, NovAtel was designing systems equipment that would use protocols adopted by various regulating agencies in Northern Canada, China, Peru, Chile, Mauritius and Costa Rica.

In 1988, NovAtel signed an agreement to become an Original Equipment Manufacturer (OEM) supplier to Northern Telecom. NovAtel had developed cellular radio base stations which would interconnect with Northern Telecom's cellular switch. This agreement, originally expected to last three years, was extended in 1991 to March 31, 1993, with a one year option for further extension.

On November 23, 1989, NovAtel and Northern Telecom announced that they had successfully completed the first commercial handoff between two separate cellular service providers. One of the major problems faced by each manufacturer was that its equipment was not fully compatible with other manufacturers. For example, if a subscriber was in an area served by NovAtel equipment and crossed into an area served by another manufacturer's equipment, the call could be terminated. The commercial handoff showed that NovAtel equipment could inter-connect with another manufacturer's equipment.

A 1991 NovAtel internal report predicted significant change in the cellular systems industry. NovAtel predicted reductions in equipment size (50%), cost (40%) and power consumption (25%).

In early 1991, SRI International reported to NovAtel's Management Committee that NovAtel's system architecture provided a major competitive advantage, especially in the U.S. RSA market. NovAtel's radio components were good, the systems performed to specifications and the pricing was competitive.

Production

NovAtel manufactured its cellular systems in Calgary. It intended to move systems manufacturing to Lethbridge following expansion of the Lethbridge plant and the construction of the subscriber equipment manufacturing facility in Calgary, the Cimplex plant. These expansions were expected to cost about $37 million.

Marketing and sales

OEM sales

Beginning in 1989, NovAtel made sales to Northern Telecom under an OEM agreement. As can be seen from the chart at the end of this appendix, OEM sales amounted to $37.9 million in 1989, $65.9 million in 1990 and $66.0 million in 1991. A 1991 NovAtel internal report indicated that this market was expected to decline moderately in late 1992 and substantially in 1993 as Northern Telecom introduced its own new base station equipment.

Sales to the U.S. market (non-OEM)

NovAtel marketed its U.S. systems equipment from offices in Atlanta.

In 1986, NovAtel had limited experience in the U.S. and other international markets. By contrast competitors, through experience gained with other products, had gained significant experience and credentials in these markets.

The U.S. was the market that NovAtel wanted to penetrate. As the FCC began to license the smaller MSAs in 1986, NovAtel began to market aggressively in the U.S. NovAtel's equipment was relatively inexpensive, had a distributed design, was small in size and was well-suited for this market. NovAtel sold several systems. In addition, it developed a financing strategy for competing in the RSAs.

As can be seen from the chart at the end of this appendix, revenues from non-OEM sales amounted to $36.8 million in 1989, $26.3 million in 1990 and $41.5 million in 1991.

Marketing concerns

By the late 1980s, manufacturers began to realize that they had to convert to digital technology. Digital technology would permit operators to significantly increase the number of subscribers served at one time, a growing need in MSA's with larger populations. NovAtel believed that as most of its customers were in MSAs with smaller populations and RSAs, they would not need this technology until the early 1990s. At the time of divestiture, NovAtel had not completed the design and testing of its digital systems equipment.

NovAtel's subscriber equipment business

Design and development

In 1983 and 1984, NovAtel was successfully marketing its mobile cellular telephones. Many manufacturers had not been ready for the telephone market whereas NovAtel had a ready and capable product. However, the competition was not far behind and soon passed NovAtel with more attractive products.

NovAtel, along with other manufacturers, had to continue to make advances in product design, manufacturing technologies and production-line efficiencies to reduce the costs of subscriber equipment production. While these advances would also provide the customer with more "bells and whistles," they were essential for producing lower-priced cellular telephones.

By 1984, Motorola had introduced the first commercial handheld unit. During the period 1985-86, other manufacturers introduced competing units.

In July 1988, the NovAtel Board admitted that the biggest single impact to NovAtel's financial position was the absence of a marketable handheld unit. NovAtel had contracted with the Japan Radio Corporation (JRC) to develop a handheld telephone for NovAtel - the PTR-800. During testing, engineers identified three hundred software problems with the PTR-800, far in excess of expectations. JRC and NovAtel finally resolved the design and development difficulties and NovAtel introduced the handheld unit to the market in late 1988.

In 1989, Motorola introduced its micro-TAC, a small handheld product. It weighed 350 grams, and had a list price of U.S. $2,495. By November 1991, the list price had dropped to U.S. $995. Motorola's product was significantly more advanced and likely enjoyed a higher gross profit margin than NovAtel's handheld unit. This intense competition resulted in further erosion of NovAtel's share of the market.

NovAtel had been designing its own handheld unit, named the ALEX, since 1987. Information presented to the NovAtel Board in October 1988 shows that the ALEX was to weigh less, be smaller, and cost significantly less than the PTR-800 handheld unit purchased from JRC. NovAtel planned to finish design by mid 1989. NovAtel's business plans for 1990 show that the ALEX was still in the design and development stage and that NovAtel intended to introduce the ALEX, now named the AVANTE, to the U.K. market in March 1990 and to the North American market in July 1990.

NovAtel was not successful in bringing the AVANTE into production.

A 1990 AGT internal audit report shows that NovAtel's new products were on average 6.6 months late which reduced NovAtel's credibility with customers. More importantly, the report also stated that "Resources continued to be committed to projects with diminished market potential or which would be technologically behind or too expensive for market needs upon release."

By 1992, the market was beginning to need "dual mode" cellular telephones. As cellular systems equipment moved to digital, cellular telephones had to keep pace. During the period of transition from analog to digital, cellular telephones have to be capable of dealing with both analog and digital systems equipment. Also, smaller and lighter handhelds with increased capability are becoming increasingly popular.

At the time of divestiture, in May 1992, an internal NovAtel report indicated that NovAtel lacked the research and development resources to keep pace with the changing demands of the market place.

Production

NovAtel purchased components for its mobile cellular telephones from Asian manufacturers and completed the manufacture of these units in Lethbridge. NovAtel purchased its handheld units as a finished product from JRC.

At the July 1987 NovAtel Board meeting, the President reported that NovAtel was experiencing a high failure rate for its model 8300 mobile telephone. He attributed the failure to purchased components. He stated that poor quality was having a profound impact on sales resulting in a June 1987 loss of U.S. $200,000.

Poor quality affected NovAtel's ability to market its products throughout 1987. In January 1988, the NovAtel Board was informed that a brief analytical exercise had been conducted by 25 senior NovAtel management and executive personnel, assisted by The Coopers & Lybrand Consulting Group. The exercise produced an estimate of waste, including product quality problems. The estimate suggested that these problems may have cost NovAtel as much as U.S. $57 million in 1987. As a result of this finding, The Coopers & Lybrand Consulting Group was retained to provide initial training in quality management to NovAtel management and employees.

In August 1989, the NovAtel Board approved the expansion of the Lethbridge plant and the construction of a new manufacturing

facility in Calgary to be known as the Cimplex plant. When construction was completed NovAtel intended to manufacture components previously purchased from Asian suppliers, in order to reduce production costs.

Marketing and sales

On October 13, 1983, NovAtel and Hickman Investments Inc. agreed to create a new Company in the United States called Carcom Inc. to market subscriber equipment.

During 1987, NovAtel formed NovAtel (UK) Ltd. to provide a marketing unit in the United Kingdom.

In 1989, NovAtel acquired Simonsen Communications A/S in Norway. This provided NovAtel with the ability to market NMT technology subscriber equipment in Scandinavia.

Although NovAtel sold subscriber equipment in Canada and parts of Europe, it sold most of its subscriber units through Carcom in the U.S. It is in the U.S. that most of NovAtel's problems with the marketing of subscriber equipment occurred.

<u>Carcom beginnings</u>

When the first cellular areas opened in the U.S., cellular telephones were generally installed in automobiles and trucks. Therefore, the major distribution channel for cellular telephones was through after-sales automotive supply outlets.

At the September 15, 1983 NovAtel Board meeting, the President and the Chairman provided background to a "potential joint venture opportunity with an automotive supply distributor in Texas." On October 27, 1983, Hickman Investments Inc. and NovAtel entered into the Carcom Shareholders Agreement, for the purpose of marketing mobile telephones throughout the United States. Hickman Investments Inc. would have 49% of the shares; NovAtel would have 51% of the shares.

By September 1988, Carcom had established a network of about 2,000 dealers, agents and service centres. During late 1987 and early 1988, these dealers and agents began to lose confidence in NovAtel products due to their poor quality. The dealers and agents began to obtain cellular telephones from other manufacturers. At the same time, manufacturers realized that cellular telephones were marketable through retail outlets in mass quantities and, by lowering prices, could achieve higher sales volumes.

For NovAtel and Carcom to remain successful, the new retail market had to be penetrated.

Carcom purchase

At the July 18, 1986 NovAtel Board meeting, the Chairman reported that Mr. H. Hickman, owner of Hickman Investments Inc., the 49% partner in Carcom, wanted to make Carcom a public company. The Chairman said that Mr. Hickman had been told that participation in the auto supply industry was not part of NovAtel's plan. NovAtel wished to remain in the cellular industry only.

On September 28, 1988, the Chairman informed the NovAtel Board that NovAtel had purchased the 49% share of Carcom held by Hickman Investments Inc. for U.S. $17 million. As part of the purchase, a U.S. $3 million payment was made by Carcom to Mr. H. Hickman for a personal undertaking that he would not compete with NovAtel.

Carcom operations

In February 1987, the Chairman of NovAtel noted that "Carcom's revenues accounted for 65-70% of the Corporation's total revenues and the U.S. market and Carcom were important contributors to the growth and vitality of the Corporation. The accounting and financial records however were in disarray, and intercompany billings, intercompany communications and the perception of poor product quality were major problems being dealt with." These statements are interesting because in 1990 the same issues resurfaced with greater significance.

One of the most significant impacts on Carcom's sales was NovAtel's inability to deliver new products on time. For example, in mid 1990, a retailer in the United States reached an agreement with Carcom for the exclusive rights to the AVANTE product in the U.S. market. The retailer, one of NovAtel's largest customers, committed to a four-colour flyer to advertise the AVANTE. As the advertising deadline neared, it became apparent that the AVANTE would not be available.

Carcom management persuaded the customer to change the flyer to a new handheld that NovAtel would be receiving from JRC. When the advertising date arrived, the new JRC handheld was not available. Product delays, product replacement and eventually the lack of any product resulted in the customer cancelling the order.

Between April 15, 1990 and June 30, 1990, AGT's internal audit reviewed NovAtel's marketing and sales operations in the U.S.

The report showed that "improvement was required in operating processes designed to control customer billing, the acceptance of

returned merchandise and obsolete inventory." Of the subscriber units shipped in 1989, 9% were returned. These returns caused a build-up in used inventory that was either obsolete or had to be sold at a loss.

During the period January to August 1990, returns were approximately 19% of sales. The major reasons for these returns were poor product quality and "churning" in the industry. Churning occurred because the cellular systems operators offered attractive deals to potential cellular users. Operators subsidized the selling price of cellular telephones to encourage more users of their systems. Often, users would return telephones after discovering that the cost of telephone calls was higher than expected. Manufacturers, including NovAtel, had to refurbish and retest the returned telephones before they could be sold again. NovAtel estimated that the cost of returns was approximately U.S. $1 million in September 1990.

On September 25, 1990, a NovAtel internal memorandum, summarized a number of problems within Carcom. These included:

- A major write-off in accounts receivable was probably due to Carcom's inability to process credit notes promptly.

- A significant write-off was needed since returned products were credited back to inventory at cost, even though a portion of the products were unsaleable.

- The return rate was approximately 20,000 telephones per month, and the system could not cope with the volume. Processing of returns appeared to be in arrears by four months.

According to Herschel Shosteck Associates, in 1986 NovAtel had 10.9% of the market for mobile/transportable telephones, with most sales being in the U.S. through Carcom. As a result of poor quality in its subscriber equipment, by 1988, it had only 2.4% of the market. By 1991, Motorola's share of the market for mobile/transportable telephones had grown to 25.6% with a 48.8% share of the portable market. By 1991, due to aggressive competition and poor product quality and an inability to meet product deadlines, NovAtel's market share of mobile/transportable telephones had shrunk to 3.6%, and for portables to 1%.

Analysis of NovAtel's results by period

Introduction

NovAtel's history can be divided into three financial periods. The period from 1983 to 1989 is the period of growth and expansion. NovAtel moved from being a start-up company to a significant competitor in the cellular industry. During this period, management made many decisions that impacted the second period, the year to December 1990. Decisions made in the earlier years came to a head in 1990, with alarming consequences. The third period, from January 1991 to May 1992 was one of cost reduction and preparation for divestiture. During this latter period, the Management Committee cut costs and determined if the Company could be sold in its entirety or needed to be broken up.

1983 through 1989

During the period 1983 through 1989, NovAtel established itself internationally as a manufacturer and distributer of cellular systems and cellular telephones. This was a period of rapid growth and expansion. With rapid growth, came a number of successes as well as setbacks.

In 1984 NovAtel decided to discontinue development of the model 2881 mobile cellular telephone. This resulted in an extraordinary loss of $24.5 million.

During 1985, NovAtel recognized the costs of significant engineering changes, rework charges and inventory provisions. These costs totalled $11.5 million for mobile telephones and $2.7 million for systems products.

In 1988, NovAtel acquired the 49% share of Carcom owned by Hickman Investments Inc. for U.S. $17 million. It also formed a subsidiary in the United Kingdom (1987) and acquired a subsidiary in Norway (1989).

These acquisitions expanded NovAtel's subscriber business and in 1989 the Company commenced construction of the Cimplex plant in Calgary. At the same time, the Company expanded its manufacturing capacity at its Lethbridge plant. This expansion cost about $37 million by the end of 1989.

During 1989, NovAtel began to finance systems sales in the MSA market, and to establish a client base in the RSA market.

Annual gross revenues grew from $15.8 million in 1983 to $282 million for 1989. During the same period, assets grew from $39.8 million to $204 million, and inventory grew from $8.1 million to $81.6 million.

In 1983, NovAtel was debt free; by the end of 1989, bank advances and debt totalled approximately $51.5 million. This debt resulted in NovAtel incurring interest expense of $9.4 million in 1989. Over the entire period, interest charges amounted to $15.8 million.

As the Company grew, so did its expenses. Selling and marketing rose from $5.6 million in 1983 to $21.2 million in 1989, research and development increased from $4.9 million to $19.4 million and general and administration expenses increased from $5.0 million to $14.9 million.

The period 1983 to 1989 is marked by NovAtel's inability to achieve budgeted results. Repeatedly, NovAtel budgeted profits and incurred losses.

The systems business thrived, while the subscriber business suffered. In 1989, the systems business contributed a gross profit of about $32.8 million on sales of $74.7 million. The subscriber business contributed a gross profit of about $19.8 million on sales of $192.9 million.

The overall loss for the period 1983 to 1989 was $152.4 million. Some of the unusual costs in this period were:

	Millions
Discontinue model 2881	$24.5
Costs of rework - mobile telephones	11.5
Costs of rework - systems	2.7
	$38.7

1990

In setting its 1990 business plan, management planned to:

- achieve major reductions in cost, (16%) and improve the quality of its products,

- achieve significant growth,

- hold price declines to 8 to 9% for subscriber equipment, and

- increase sales to $422 million and achieve a profit of $30 million after tax.

By the end of 1990, all of these expectations proved to be unrealistic. Losses which had gone from a high of $43.6 million in 1984 to a low of $3.7 million in 1989, soared to $203.9 million in 1990.

The price paid for Carcom in 1988 exceeded the value of the net assets acquired by $15.4 million, which was accounted for as goodwill. In 1990, NovAtel management decided that in light of the losses being experienced this goodwill had no value and had to be written-off.

In 1989, NovAtel agreed to provide loans to General Cellular Corporation for the acquisition of systems licenses. In 1990 this loan proved doubtful and required a loan loss provision of $33 million.

Management expected several new subscriber products in 1990. These products did not become available. Improvements in competitors' products made NovAtel's products unattractive unless sold at a significant discount. In addition, NovAtel had by this time acquired a reputation for poor quality. NovAtel was forced to lower its prices to defend its market share.

As NovAtel lowered prices, inventory values dropped, including the inventory held by NovAtel's customers. NovAtel provided price protection to its customers. Under price protection, as NovAtel lowered its selling prices, customers holding inventory purchased at a higher cost were given credits when ordering new inventory to compensate for the new prices.

The systems business continued to grow and provide a positive contribution to NovAtel, while the subscriber business continued to suffer under the pressures of intense price cutting in the market.

In 1990, the systems business contributed $41.8 million profit, and the subscriber business contributed a $4.5 million loss, prior to

charging inventory provisions and warranty expenses of $51.9 million. The $51.9 million was largely attributable to the subscriber business. After accounting for other income of $0.4 million, NovAtel made a gross loss of $14.2 million. After charging other expenses of $189.7 million, NovAtel made a $203.9 million loss for the year.

One factor affecting profitability was that NovAtel could not recognize as revenue those systems sales that were financed by loans from NovAtel. Also, interest income on loans made to finance those sales could not be recognized. The loan agreements resulted in NovAtel providing both equipment financing and working capital to borrowers in start-up situations. The borrowers used this working capital to pay the first years' interest. As payments were actually financed by NovAtel, NovAtel was in effect paying itself for the sale price of the equipment and for interest. Prudent accounting policies dictated that the revenues, including interest, be deferred until NovAtel had reasonable assurance of repayment. This was usually the case when the borrower could demonstrate that the payments came from real earnings. The net revenue deferred in this way in 1990 amounted to $20.6 million.

To summarize, in one year, NovAtel suffered a loss of $203.9 million which was greater than the sum of the previous seven years' losses. The gross profit on sales was negative, amounting to $14.2 million. This was a $68 million swing from the year before, largely resulting from lower selling prices for subscriber equipment.

Some of the unusual costs in the year were:

	Millions
Inventory provisions	$ 33.9
Warranty provisions	17.9
Loan loss provision	34.2
Carcom write-off	15.4
	$101.4

January 1991 to May 1992

In January 1991, NovAtel had a new management team. Employee morale was poor. Customers were concerned about the value of the NovAtel products they had ordered, or had in inventory. The Management Committee, having limited knowledge of NovAtel's business, managed ongoing operations while it identified key problems and developed strategies to deal with them. In the course

of developing a divestiture strategy, the Committee undertook several cost cutting measures to improve the profitability of the Company.

Further price reductions reduced the value of subscriber equipment inventory, while poor product quality continued to require warranty work. Loan losses were high in the period, but mainly attributable to loans provided to companies to acquire licenses from lottery winners, and not from loans financing the sale of systems equipment.

Severance and relocation costs, machinery write-downs, and provisions for closures, resulted from decisions not to open the Cimplex plant and shut down NovAtel's European operations. At the same time, NovAtel wrote down the value of its Cimplex and Lethbridge plants and Calgary headquarters.

By May 1992, staff levels had been reduced to 1,139 from 1,775 in September 1990.

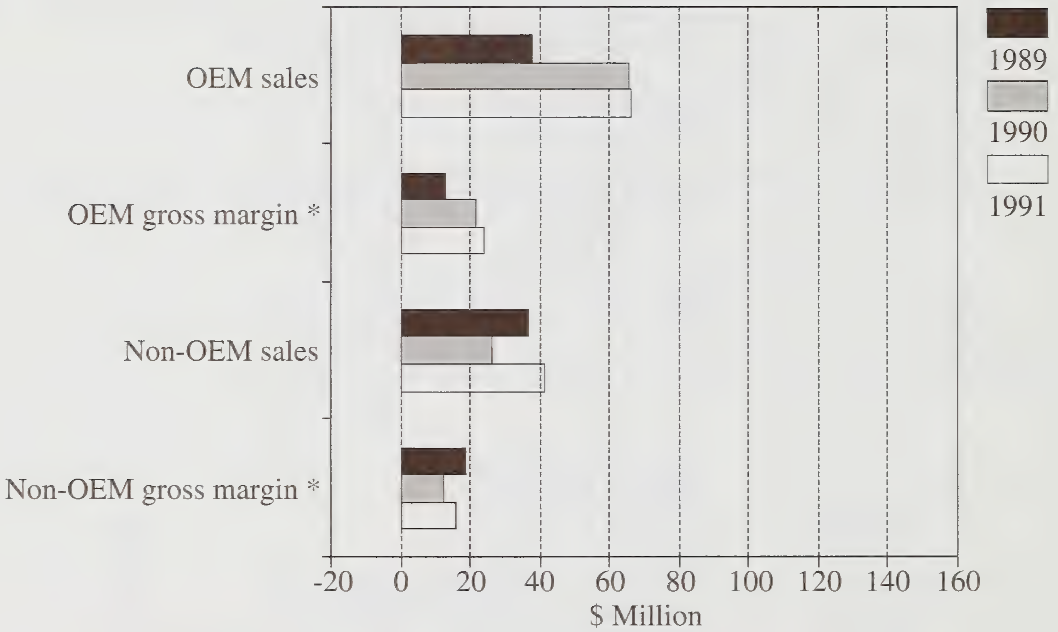
In 1991, the systems business continued to provide a positive contribution to NovAtel. However, the Company lost $190.4 million in the year.

Some of the unusual costs in the year were:

	Millions
Inventory provisions	$24.5
Warranty provisions	8.2
Provision for closures	10.4
Severance and relocation costs	6.2
Write-off of idle assets	6.5
Cancellation of purchase commitments	4.9
Professional fees	6.2
Writedown of capital assets	9.6
Loan loss provision	17.5
	$94.0

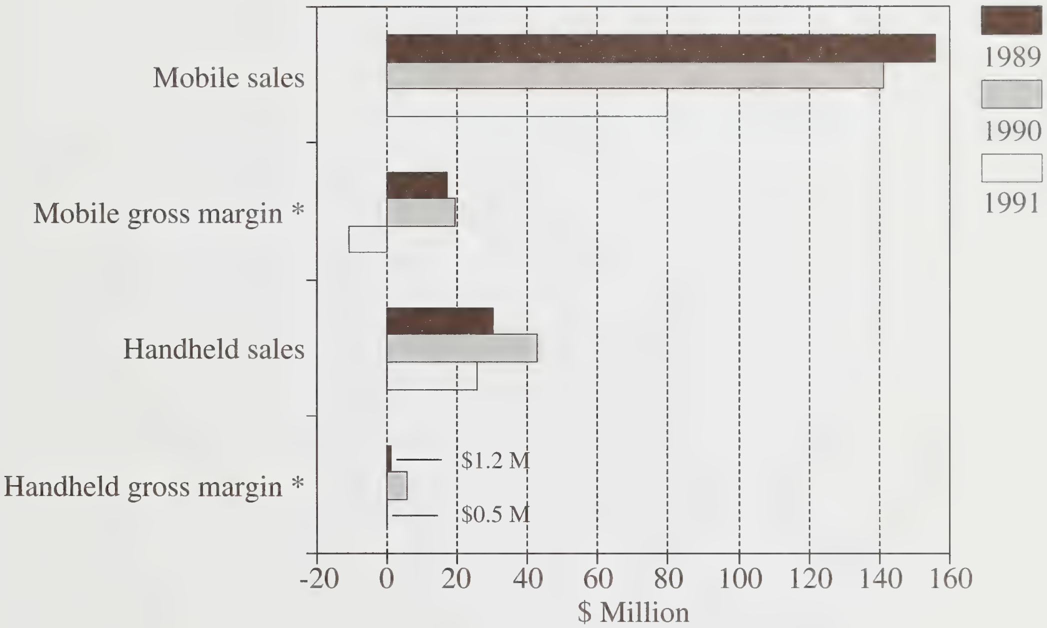
The losses of NovAtel in the five month period to May 29, 1992, including losses arising on divestiture, amounted to $116.6 million. Since this amount has not been audited, I have not provided an analysis of this loss as I have done for the previous losses.

NovAtel Communications Ltd.
Systems Sales and Gross Margin



* Gross margin before R & D, and inventory and warranty provisions

NovAtel Communications Ltd.
Subscriber Sales and Gross Margin



* Gross margin before R & D, and inventory and warranty provisions

Extracts from the TELUS Prospectus

Extracts from the Final TELUS Prospectus Filed on September 11, 1990

(All references to **NovAtel Communications Ltd.** have been printed in bold type in these extracts.)

Financial Statements

The following are extracts from the notes to the consolidated balance sheets of AGT as at December 31, 1989 and 1988, and the consolidated statements of income, retained earnings and changes in financial position for each of the years in the five year period ended December 31, 1989.

THE ALBERTA GOVERNMENT TELEPHONES COMMISSION
Notes to the Consolidated Financial Statements
(Information as at May 31, 1990 and for the five month ended May 31, 1990 and 1989 is unaudited)

8. Investments

	May 31 1990 (unaudited)	December 31 1989	1988
		(thousands)	
NovAtel Communications Ltd., Investment and advances	$ 105,432	$ 106,685	$ 54,560
Venture Capital Investments, at cost	5,988	6,198	4,473
Other Investments, at cost	4,085	4,086	4,070
	$ 115,505	$ 116,969	$ 63,103

During 1989, the Commission paid $42,500,000 to purchase 100 common and 3,117,100 preferred shares of **NovAtel** and to acquire an existing shareholder's interest in a loan receivable from **NovAtel**. Additional consideration is payable by the Commission in the event it sells **NovAtel** shares or technology for a premium prior to January 18, 1991. This transaction increased the Commission's ownership from 50% to 100% of the issued and outstanding shares of **NovAtel**. However, the Commission's control is only temporary as it is negotiating with potential strategic partners to assume an equal interest in **NovAtel**.

In addition, in 1989 the Commission purchased preferred shares of **NovAtel** for a total consideration of $18,645,000 and converted its outstanding advances due from **NovAtel** to common shares. During the five months ended May 31, 1990, the Commission purchased additional preferred shares of **NovAtel** for a total consideration of $12,600,000.

In accordance with the Commission's accounting policy, the investment in **NovAtel** was written down by $5,187,000 in 1989 and $9,493,000 in 1988.

13. Commitments and Contingent Liabilities

(a) In the normal course of business, the Commission's non-consolidated subsidiary, **NovAtel**, has issued financial commitment letters totalling $349,540,000 (U.S.) to customers to provide

cellular service in rural areas of the United States. In addition, **NovAtel** has entered into a sales financing agreement with a customer, subject to final contract, to a maximum of $81,000,000 (U.S.). Financing to be provided under these commitment letters will be secured by first charges on equipment, licenses and all other assets of the third parties. Management believes that the amount ultimately to be financed under these commitments will not exceed $340,000,000 (U.S.) and the collateral value of the security taken in respect of these financing arrangements will exceed the lending values. To facilitate this financing by **NovAtel**, the Commission may be required to provide a guarantee. Management believes that this guarantee will not exceed $100,000,000 (U.S.).

14. Subsequent Events

(a) On July 24, 1990, the Commission entered into a share purchase agreement which, if completed, will result in the disposition of a 50% interest in **NovAtel Communications Ltd.** at an amount in excess of its carrying value. The resulting gain will accrue to the TELUS Corporation ("TELUS")...

Business of the Corporation

(This section of the prospectus deals with the following five headings. The section entitled "Investment in **NovAtel**" is reproduced below in its entirety.)

Principal Telecommunications Operations
Other Operations
Capital Expenditures
Employee Relations
Investment in **NovAtel**

TELUS owns **NovAtel Communications Ltd. ("NovAtel")**, which is reflected as an equity investment of $105.4 million as of May 31, 1990. **NovAtel** is currently the only Canadian manufacturer of cellular telephones and systems. **NovAtel** designs, manufactures and distributes the three main types of cellular telephones: hand-held or portable units, car-telephones and transportable units that require a power-pack. These telephones can be designed to operate in the three major cellular standards used in the world. **NovAtel** also supplies complete turnkey cellular network systems, using a proprietary design that is well suited to smaller city and rural markets.

Since it was formed in 1983 to pursue business opportunities in cellular telecommunications, **NovAtel** has achieved a significant share of the market in cellular telephones and systems, particularly in the large North American market, where it is ranked as one of the top three suppliers of cellular telephones. **NovAtel's** revenues have steadily increased, reaching $282 million in 1989. Although operating gross margins have improved steadily due to improvement in production costs, **NovAtel** has not been profitable on a yearly basis. **NovAtel** experienced a net loss of $3.7 million in 1989 compared to a net loss of $7.9 million in 1988. The net loss for the five months ended May 31, 1990 was $13.8 million compared to a net loss of $5.9 million for the five months ended May 31, 1989.

NovAtel employs over 1,300 employees worldwide, with headquarters in Calgary. Research and development and manufacturing activities are carried out in Alberta, while marketing operations are based in Canada, the United States, the United Kingdom and Norway. Through its research and development efforts, **NovAtel** has developed a unique cellular systems modular design, for which it received the 1989 Canada Award for Business Excellence - Bronze Award for innovation.

The cellular communications market has exhibited strong growth during the last five years, reflecting the increased use of mobile communications in general and particularly in the transportation and service industries. NovAtel is well-positioned for growth in the cellular market, and it recently acquired United States and exclusive Canadian manufacturing rights and worldwide marketing rights for a digital cordless system technology to be used inside buildings. Field trials to be conducted with AGT Limited and other western Canadian telephone companies are planned for early 1991. AGT Limited's proven operating strengths and direct access to the Alberta market provide synergy to **NovAtel's** manufacturing capabilities in facilitating field trials for its products.

The growth of the cellular systems business in the United States, particularly in rural areas, has provided new opportunities for **NovAtel**. Systems suppliers, including **NovAtel**, routinely provide financing to cellular operators in the rural areas to facilitate systems sales. It is expected that TELUS will be required to provide a guarantee of up to U.S. $100 million to facilitate total financing by **NovAtel** of up to U.S. $340 million (see Note 13 to the Consolidated Financial Statements). Such financing will be secured by first charges on the assets of the cellular operators, which security interests may be pledged by **NovAtel** to its lenders.

The overall growth of the cellular communications market has attracted major global competitors in both the terminals and systems businesses. These competitors are usually well-financed, with extensive research and development capabilities and global distribution networks. In order to sustain its competitive position and to keep pace with technological change, **NovAtel** will be required to make significant capital investments. Following a search for a strategic partner for **NovAtel**, a share purchase agreement dated July 24, 1990 was entered into with Robert Bosch GmbH ("Bosch") whereby Bosch agreed to acquire a 50% interest in **NovAtel**. Bosch is a major global automotive, electronics and telecommunications company. Closing of this transaction which is subject to the fulfilment of certain conditions, including approval by Investment Canada, is expected to occur by the end of the first quarter of 1991. No assurances can be given that Investment Canada will approve the transaction. TELUS will receive cash consideration equal to 50% of **NovAtel's** net asset value plus $50 million. Based on TELUS' investment in **NovAtel** as of May 31, 1990, the net cash payment is estimated to be between $90 million and $100 million. TELUS will also receive additional compensation under an "earn-out" provision, the amount of which cannot be determined at this time.

<u>Financial Forecast</u>

TELUS CORPORATION

Forecast Consolidated Statement of Income
For the Period July 1, 1990 to December 31, 1990
(thousands except per share information)

Operating revenues:	
Long distance service	$ 382,900
Local service	191,400
Other, net of uncollectibles	47,900
	622,200
Operating expenses (1)	484,000
Income from operations	138,200
Equity in income of subsidiary (2)	16,900
Income before interest expense	155,100
Interest expense (3)	54,200
Income before provision for taxes	100,900
Provision for taxes	2,800
Net income (4)	$ 98,100
Earnings per common share	$0.71

The Forecast Consolidated Statement of Income has been prepared on the basis that the Reorganization would be effected July 1, 1990. The impact on the Reorganization taking place at a date following July 1 is that the net income reflected in the forecast would be reduced by an estimated $16.4 million per month. If the Reorganization is effected on September 28, 1990, net income for the period October 1, 1990 to December 31, 1990 will be approximately $48.9 million.

Notes:

(1) Operating expenses include depreciation and amortization of $116,500.

(2) **NovAtel Communications Ltd.**, a wholly-owned subsidiary, is accounted for on the equity basis.

(3) Interest expense is comprised of interest of $77,400 on debt, net of sinking fund earnings of $15,000 and capitalized interest of $8,200.

(4) Net income results in a rate of return on AGT Limited's equity, used to finance the rate base, estimated at 13.3%.

Summary of Significant Forecast Assumptions

The following assumptions form an integral part of the forecast and, in the opinion of management, include all significant assumptions upon which it is based.

1. The forecast Consolidated Statement of Income has been prepared in accordance with the accounting policies expected to be used during the forecast period, which are the same as those used by The Alberta Government Telephones Commission in its most recent audited financial statements. See Note 2 to the Consolidated Financial Statements.

2. The general economic environment in Alberta and Canada will continue without major changes to the current rates of growth and inflation. For purposes of this forecast, Alberta economic growth of 2.7% for 1990 and an anticipated consumer price index increase of 4.8% for 1990 have been assumed.

3. Forecast revenues are based on the following operating assumptions:

- anticipated annual growth in long distance messages	10.2%
- anticipated annual growth in network access lines	3.2%
- approved decrease in long distance rates	5 - 20%
- approved increase in local rates of:	
- per residential line per month	$2
- per business line per month	$4

4. Expenses have been forecast based on historical trends and management's estimate of the expenses required to support the forecast revenues. Depreciation for 1990 has been forecast using a composite rate of 6.9%.

5. Interest expense has been forecast assuming a cost of borrowed funds of 9.8% for refinanced long-term debt and 14.2% for short-term debt which reflects the actual effective rates applicable to such debt.

6. No provision for income taxes is required by virtue of deductions available for income tax purposes in excess of those available for accounting purposes. The Corporation has recorded a provision for the federal large corporation tax.

7. Earnings per common share has been calculated after giving effect to this offering, the Reorganization (see "The Corporation - Reorganization") and a maximum of 3,310,000 Common Shares to be purchased by eligible employees as Matching Shares described under the heading "Employee Share Purchase Plan", but does not include any Common Shares reserved for future issuance as Matched Shares pursuant to the exercise of rights granted to eligible employees under the Matching Offer. This results in the number of shares outstanding for the six months ending December 31, 1990 being 137,731,479 Common Shares.

8. The sale of a 50% interest in **NovAtel Communications Ltd.**, referred to in "Business of the Corporation - Investment in **NovAtel**", will not be completed until after December 31, 1990 and therefore no gain on the transaction has been reflected in the forecast.

Documents Supporting Section 1

LEGISLATIVE ASSEMBLY
ALBERTA

LAURENCE DECORE
LEADER, LIBERAL OPPOSITION
M.L.A., EDMONTON GLENGARRY

Steven Glover
Executive Director
Institute of Chartered Accountants of Alberta
901 Toronto-Dominion Tower
Edmonton AB T5J 4R2

June 4, 1992

Dear Mr. Glover,

I would like to file a formal complaint that the Auditor General of Alberta may be in conflict of interest in performing an investigation into the financial affairs of NovAtel Communications Limited.

The Auditor General signed the Telus Corporation prospectus, which also dealt with the financial affairs of NovAtel. As well, it appears from statements made by the Auditor General, the Treasurer and even the Speaker that the Auditor General may have failed to fulfil his duty under the Auditor General's Act to provide the Treasurer and the Minister Responsible with management letters relating to the financial affairs of NovAtel.

The Auditor General's deep prior involvement with NovAtel during the period which is the subject of the investigation he has been asked to undertake solidifies my belief that he cannot now possibly perform the investigation objectively.

I am aware of section 204.1 of the Institute of Chartered Accountants of Alberta Code of Ethics. I make this complaint as a "reasonable observer" who believes that the Auditor General's past involvement with respect to the financial affairs of NovAtel could impair his professional judgement or objectivity in the conduct of this latest investigation, and thus taint its results.

....2

LEGISLATURE OFFICE:
204 LEGISLATURE ANNEX
EDMONTON, ALBERTA T5K 1E4
TELEPHONE: (403) 427-2292
FAX: (403) 427-3697

CONSTITUENCY OFFICE:
#213, 12907 - 97 STREET
EDMONTON, ALBERTA T5E 4C2
TELEPHONE: (403) 475-4251
FAX: (403) 475-1366

RECYCLED BOND

As a respected, self-governing body of professionals, I feel it incumbent upon your association to become involved in this matter in order to retain the integrity of the organization and its members.

Sincerely yours,

Laurence Decore

Laurence Decore,
Leader, Alberta Liberal Opposition

August 21, 1992

ICAA PROFESSIONAL CONDUCT COMMITTEE RECOMMENDS NO ACTION BE TAKEN AGAINST PROVINCIAL AUDITOR GENERAL

Upon completion of a preliminary investigation, pursuant to the Chartered Accountants Act, into a complaint against D.D. Salmon, FCA, Auditor General (AG), Province of Alberta, the Institute of Chartered Accountants of Alberta's Professional Conduct Committee has ruled that Mr. Salmon has not breached the Institute's Rules of Professional Conduct and has "directed that no further action be taken against" him.

This preliminary investigation of Mr. Salmon was conducted after a complaint was lodged with the Institute alleging that "the Auditor General of Alberta may be in conflict of interest in performing an investigation into the financial affairs of NovAtel Communications Limited." The AG accepted a "special duty" to conduct a review of the financial affairs of NovAtel Communications Limited at the bequest of Premier Don Getty, as President of the Executive Council in a letter dated May 21, 1992, under the provisions of section 17(2) of the Auditor General Act.

Two major concerns were raised, both of which the Professional Conduct Committee concluded were unfounded.

1. The AG may be in a conflict of interest in performing this special duty because of his prior involvement with NovAtel.

2. Management letters relating to NovAtel's financial affairs were not provided to the Provincial Treasurer and the Minister Responsible.

With regard to a possible conflict of interest, the preliminary investigation found that Mr. Salmon's acceptance of the special duty did not breach the Institute's Rules of Professional Conduct and, in particular, Rule 204.1. Rule 204.1 relates specifically to the acceptance of audit engagements and is not relevant to this engagement. The Committee considered other rules that relate to objectivity or conflicts of interest and again concluded no other rules were breached.

Mr. Salmon's prior involvement, as AG, can be summarized as follows:

- he had **no** involvement with the financial forecast for the period ended December 31, 1990 which was included in the TELUS Corporation Prospectus issued in September 1990. The financial forecast was reported on by Deloitte & Touche.
- he provided letters to various securities commissions which explained his involvement with the financial statements included in the prospectus.
- he did not sign the TELUS Prospectus.

- he consented to the inclusion in the prospectus of his Audit Report on the financial statements of AGT and has responsibility for only those items.
- he was auditor of AGT for many years
- he was co-auditor, with Deloitte & Touche, of AGT for the year ended December 31, 1989
- he issued a compilation report in conjunction with Deloitte & Touche for the five months ended May 31. 1990.
- he became a joint auditor of NovAtel in 1989 when AGT acquired the other 50% of NovAtel from Nova Corporation.

In view of these findings, the Professional Conduct Committee determined that Mr. Salmon's investigation under Section 17(2) of the Auditor General's Act would not breach any of the Institute's Rules of Professional Conduct and in particular those relating to conflicts of interest and objectivity.

With regard to the allegation that Mr. Salmon, as Auditor General, failed to fulfil his duties under section 28 of the Auditor General Act, the Committee determined that Mr. Salmon exercised professional judgement responsibly and did this with due care. The 1989 management letter dated October 22, 1990 was signed by both Ernst & Young and the AG and was sent to Mr. J.W. Burrows, Chairman and Chief Executive Officer of NovAtel. The 1990 management letter was sent to the minister responsible as well as to NovAtel senior management. The Committee determined that appropriate parties were informed as required under section 28.

The Committee also reviewed Mr. Salmon's reasons for not presenting a special report under section 20(1) of the Auditor General Act and concluded that the judgement he exercised could not be found to be a failure to perform his duties with due care.

In summary, the Committee found that Mr. Salmon did not breach any Rules of Professional Conduct.

For Further Information Please Contact:

Steven J. Glover, FCA
Executive Director, ICAA
424-7391

Blain Banick
Public Affairs Coordinator, ICAA
424-7391

Management letter issued following the 1989 audit of NovAtel

October 22, 1990

Mr. J.W. Burrows
Chairman and Chief Executive Officer
NovAtel Communications Ltd.
1020 - 64 Avenue N.E.
CALGARY, Alberta
T2E 7V8

Dear John:

Our examination of the consolidated financial statements of NovAtel Communications Ltd. for the year ended December 31, 1989 has been completed. During the course of our examination we identified a number of opportunities for improvement within your internal control system and year end accounting routines. The attached memorandum of these matters is enclosed for your information and further consideration. We have provided a draft version of this memorandum to Bob Varma, Vice President and Group Controller.

Our examination was designed to express an opinion on NovAtel's financial statements and not to evaluate the adequacy of the Company's internal controls. Accordingly, our examination would not necessarily disclose all conditions requiring attention.

The comments outlined in the memorandum concern controls and are not intended to reflect in any way upon your personnel.

Should you wish to discuss the memorandum with us, we would be pleased to do so at your convenience.

We would like to thank you and your staff for the excellent assistance we received during the audit.

Yours sincerely,

Original signed by Ernst & Young

Chartered Accountants
Calgary, Alberta

Original signed by Donald D. Salmon

Auditor General
Edmonton, Alberta

NovAtel Communications Ltd.

Post Audit Memorandum

December 31, 1989

A. Accounts Receivable

1. Credit memos

During the A/R confirmation procedures performed at October 28, 1989, it was noted that in a few instances, credit memos issued in November relating to pre-October 28, 1989 sales were not accurately reflected in the October general ledger balance. Our procedures at year end determined that only a small amount of credit memos relating to 1989 sales were issued in January and these were properly reflected in the final year end balance of receivables. However, if activity levels continue to increase, a more formalized accrual procedure for credit memos will have to be set up and followed on a monthly basis. To date, accruals are done to a limited extent, on the Astec & Hyundai accounts only.

B. Fixed Assets

1. Transfer of Atlanta assets

During 1989, assets were sold by NovAtel Communications Ltd. (Ltd.) to NovAtel Carcom Inc. (Carcom) without the supporting legal documentation. Assets, which were physically in Atlanta but which were the property of Ltd., were transferred from the Ltd. general ledger to the Atlanta general ledger. Since Atlanta is legally a division of Carcom, this transaction should be supported by proper legal documentation. As well, for tax purposes, the transaction will be deemed to occur at fair market value.

C. Accounts payable

1. Double payment of invoices

During our reconciliation procedures of suppliers statements, we noted that occasionally NovAtel will pay the same invoice twice. This can occur when the buyer submits the invoice to accounts payable upon receipt of the goods and then the suppliers submits their own invoice. The account payable clerks then pay both invoices without the proper supporting documentation. Recently, NovAtel has instituted a new purchase order procedure where a buyer must set up a purchase order on the Maxcim system for any purchases over $300 and the accounts payable clerks are instructed to only pay invoices which are supported by purchase orders on the system. Once the invoice is processed on the Maxcim system, the purchase order reference is removed and the accounts payable clerks will not pay any subsequent invoices they receive. NovAtel should ensure that this procedure is followed in the future.

2. Approval policies

Policies involving approvals of accounts payable entries and payroll registers were not followed during parts of 1989. While no errors were found during our tests of accounts payable and payroll entries, failure to follow formal policy could result in errors occurring and not being detected.

3. Held cheques

Most of NovAtel suppliers offer favourable discounts if payment is received within ten days of invoicing. However, NovAtel processes a large amount of cheques which are then not mailed until after the opportunity to earn the discount has passed. The savings which NovAtel could earn would be substantial given the large dollar value of invoices processed each month.

D. Inventory

1. IQC inventory account

As in previous years, the IQC inventory general ledger account was not completely reconciled at year end. A detailed analysis was performed to isolate the possible error to ensure that it was not material for financial statement purposes, but an assessment of the cause of the discrepancy was not made.

Errors could be a result of the procedures used to book the ARN accrual, which accrues for items which have been received into inventory but have not yet been processed by accounts payable. The journal entry booking this accrual is a debit to the IQC inventory account and a credit to accounts payable. The accrual excludes items which have been on the report for over three months under the assumption that these items have been processed by account payable but have not been properly removed from the report. This arbitrary cutoff of three months could result in an over-accrual or under-accrual of accounts payable items and impacts the balance of the IQC account. This arbitrary cutoff is also used for the accrual of fixed asset and expense items and could result in errors in the recorded value of these items as well.

In future, monthly reconciliations should be done to detect any errors which may occur and, as well, the cause of the unreconciled balance should be determined and any unreconcilable balance should be written off.

2. Obsolete inventory

In July of 1989 an in-depth analysis of the amount of obsolete inventory was done by the field personnel at all inventory locations. The analysis was compared to the amount provided in the accounting records and it was found that amount provided by accounting was adequate. However, the analysis done in July was not updated for year end purposes and an analysis done by E & Y showed that the year end accounting provision was not adequate by $320,000 subject to adjustment for the amount of strategic levels of inventory needed for servicing of products sold in previous years.

E. Revenue

1. Sales prices

The prices on the marketing price lists are often different than the price on sales orders because the salesmen give discounts to certain customers. Documentation of the discounts is difficult to obtain, which may result in sales being made at unauthorized prices. The marketing price list should be amended to include a section on percentage discounts given to particular customers. Sales orders should not be processed unless the prices and the discounts agree to the marketing price list. Discounts given which are not included on the marketing price list should be approved by the appropriate level of management.

2. Packing slips

Packing slips which accompany inventory shipments are generated by shipping personnel from the Maxcim system but are not pre-numbered. Pre-numbering and regular checks of the continuity of the packing slips would decrease the risk that a shipment could be made but not recorded if the slip is lost or misplaced.

F. Computer Environment

1. Disaster recovery plan

NovAtel does not have a plan in place to recover its data processing and management reporting systems in the event of a disaster. Inability to recall information after a disaster could lead to lost revenues and significant unexpected expenses. A disaster recovery plan that ensures continued operations should be documented and tested periodically.

2. Microcomputer back-up

In recent years, NovAtel has significantly increased its use of user-designed spreadsheets and other programs for the various microcomputers at head office. Some of those applications were time-consuming to develop and contain valuable information that should be retained. A formal policy should be developed for the back-up and off-site storage of valuable applications to ensure that unnecessary time and expense does not have to be incurred in the event of a disaster.

G. Other

1. International Operations

The recent acquisition of your Norwegian subsidiary and the transfer of the U.K. operations to NovAtel Communications (U.K.) Ltd. emphasizes the need for the development of a tax effective international operating structure. It is imperative that any structure which is implemented considers not only the short term needs of NovAtel, but also the long term development of the international operations.

Management letter issued following the 1990 audit of NovAtel

July 30, 1991

Mr. W.D. Grace, FCA
Chairman, Management Committee
NovAtel Communications Ltd.
1020 - 64th Avenue N.E.
CALGARY, Alberta
T2E 7V8

Dear Mr. Grace:

Audit of the Company has been completed for the year ended December 31, 1990. Audited financial statements were forwarded on April 17, 1991. Enclosed is a copy of a letter from Coopers & Lybrand, Chartered Accountants, who acted as my agent in the audit of the Company. Their letter and the summary of points arising out of the 1990 audit has been reviewed and the recommendations have the concurrence of this Office.

I would appreciate being advised of the action taken or proposed to address these recommendations.

The observations of my agent qualify for inclusion in the Auditor General's report to the Legislative Assembly pursuant to section 19 of the Auditor General Act. I will advise you, before the report is issued, if any will be included.

Please convey my thanks to the staff of the Company for the courtesy and co-operation provided during the audit.

Yours truly

Original signed by

D.D. Salmon, FCA
Auditor General

/ka

Encl.

cc: Mr. J.D. McDonald
Deputy Chairman

Mr. D. Sinclair
Chief Financial Officer

The Hon. F. Stewart
Minister of Technology, Research and Telecommunications

Mr. K.H.G. Broadfoot
Deputy Minister of Technology, Research and Telecommunications

Mr. J. Fryer, CA
Coopers & Lybrand

July 15, 1991

Mr. D.D. Salmon
The Auditor General of Alberta
8th Floor
9925 - 109 Street
Edmonton, Alberta
T5K 2J8

Dear Sir:

RE: NOVATEL COMMUNICATIONS LTD.

As a result of our examination of the consolidated financial statements of NovAtel Communications Ltd. for the year ended December 31, 1990, we have identified a number of matters relating to the Company's operating and control systems which, under the terms of paragraph 7 of the Agency Agreement between us, we wish to bring to your attention. These matters are set out in the attached report.

Management has indicated that it agrees with the points made and has either implemented, or started implementing, a number of the recommendations.

We are familiar with Sections 18, 19 and 28 of the Auditor General Act which have been considered in drafting these reports. However, it is relevant to note that we were appointed auditors of NovAtel on December 6, 1990, with an initial requirement to complete our audit of the consolidated financial statements by January 26, 1991. (Subsequently, on January 14, 1991, we entered into an agency agreement with the Auditor General of Alberta who had become the auditor of NovAtel effective December 31, 1990). In these circumstances we determined that the most effective audit approach would be to carry out extensive tests and procedures to substantiate amounts in the consolidated financial statements for the year ended December 31, 1990. The alternative would have been to carry out an extended assessment of the company's accounting systems and control procedures to assess the extent to which the risk of error was reduced, thereby enabling the extent of our testing of year end balances to be reduced. Since our examination did not include a review of accounting and control systems, the comments in our reports do not necessarily identify all weaknesses that may be present. The maintenance of an adequate system of internal control is the responsibility of management who should consider, in deciding on a course of action, how far it would be justified to incur the cost of correcting the control weaknesses in relation to the amount at risk.

If we can provide further assistance in explaining any of our recommendations, please do not hesitate to contact us.

Yours very truly,

Original signed by Coopers & Lybrand

Justin Fryer

/pd
Enclosures

SUMMARY OF POINTS RELATING TO THE NOVATEL GROUP ARISING OUT OF THE 1990 AUDIT

NovAtel Communications Ltd.

General Comments:

Management Information System:

Information on operations throughout the group received by senior management during the year was not always sufficiently complete, accurate or timely for informed decision making. This applies particularly to information about inventory valuation, sales returns, credits to customers, warranty experience, purchase commitments and potentially doubtful accounts and loans receivable. We recommend that management review this area with emphasis on improving the information currently being used by decision makers to ensure that it is complete, timely and in the most useful format possible.

Internal Audit Group:

The AGT support group proved to be a valuable resource to the Company both in terms of the work done in reviewing and establishing procedures for implementation by the Company and in assisting the performance of our audit through the studies and tests that they carried out. It is our understanding that the Company is considering establishing its own internal audit department. We encourage the development of an internal audit function, although we believe that the initial emphasis should be in addressing the adequacy of the management information system referred to above.

Inventory:

Inventory Provision:

The methodology used by the AGT support group to review the adequacy of the 1990 inventory provisions should be implemented on a routine basis by the Company. This will serve to improve the inventory control and valuation procedures currently in place and ensure that decisions being made by management are based on the most currently available and up to date information as to inventory values.

IQC Inventory Reconciliation:

The IQC inventory account should be reconciled to the General Ledger on a monthly basis. In addition, investigation of the unreconciled balance at December 31, 1990 of approximately $1 million should be completed and, if it cannot be resolved, it should be written off.

Inventory Count Procedures:

(1) Inventory Cycle Counts:

Cycle counts should be performed at all significant inventory locations to provide better control over physical inventory balances.

(2) Inventory Count Preparation:

The results of the annual physical count indicated that poor communication of count procedures and a general lack of preparation for the count contributed to inefficiencies in the performance of the count. We recommend that standardized count instructions, pre-count meetings and stockroom reviews be implemented to improve physical count preparation and planning.

(3) Physical Verification of Work-In-Progress:

Inconsistencies exist between count locations as to the handling of work-in-progress during the stocktaking. Procedures should be standardized to ensure that work-in-progress is consistently handled in all locations.

Sales, Receivables and Receipts:

Warranty Provision:

The methodology used by the AGT support group to review the adequacy of the 1990 warranty provision should be implemented by the Company on a routine basis. In addition actual warranty costs should be matched to the provision to provide a history of warranty experience. This will help ensure that an accurate assessment of future warranty costs can be determined and that management decisions are based on the best available information with respect to warranty costs.

Cash:

Bank Reconciliations:

Bank reconciliations should be performed monthly on all bank accounts on a timely basis and the completed reconciliations should be subject to review and approval by management.

Fixed Assets:

Authorization of Capital Appropriation Requests:

A number of instances were noted where stated policy with respect to the authorization of Capital Appropriation Requests (CARs) was not followed. We recommend that Company corporate policy with respect to the authorization of CARs be adhered to strictly to ensure that capital expenditures are being made in accordance with management decisions.

Fixed Assets in Progress:

Transfers from the Fixed Asset in Progress Account (FAIP) to fixed assets accounts are not being made on a timely basis. To ensure that management is making decisions based on information that is current and complete, we recommend that transfers from FAIP to fixed assets be performed on a regular basis.

CAR - Analysis of Variances from Budget:

Currently, variance analysis on CAR authorized amounts to actual expenditures are not being performed. The lack of this control resulted in exceptions in the FAIP subledger such as the exceeding of authorization limits, errors in the recording of accruals and misclassifications between CARs. Variance analysis of actual costs to CAR budgeted amounts would have identified these situations.

Purchases, Payables and Payments:

Debit Memo Account:

Stronger controls are needed in the handling of the debit memo account to control and monitor the balances. Difficulty was experienced during the audit in obtaining the necessary information to assess this account and we would recommend that management review these accounts on a regular basis for appropriateness.

Foreign Exchange Account Reconciliations:

The reconciliation of the foreign exchange accounts included in accounts payable in the general ledger is not performed on a regular basis. It is important that this account be reconciled monthly to ensure that any discrepancies are discovered and followed up on a timely basis.

Received but not Invoiced Subledger Foreign Exchange Calculation:

The methodology developed by the Inventory and Accounts Payable departments to assess this account at December 31, 1990 should be incorporated into the Company's monthly procedures.

Purchase Commitments:

Currently, there are no procedures in place to identify and evaluate purchase commitments that have a potential impact on the financial position of the Company. Information as to the Company's commitments is important for management purposes.

Payroll:

Payroll Testing Results:

A number of discrepancies with respect to the handling of confidential personnel data, payroll records and the processing of payroll input forms were noted during our examination. Controls in this area should be strengthened and made consistent between all payroll locations to ensure that the handling of this information is in accordance with Company policy.

Review and Approval of the Payroll Register:

Company policy stipulates that the payroll register should be reviewed and approved by the payroll clerk and manager monthly. Currently, there are inconsistencies between the payroll departments as to the review of the monthly payroll register and, as such, we recommend that a standardized policy be developed and implemented at all payroll locations.

Tax:

Handling of Tax Issues:

Specific tax issues have been identified in separate letters to management. However, the Company faces possible exposure to tax liabilities which might be avoided with appropriate tax planning. We recommend that Management obtain tax advice before entering into significant transactions, particularly with respect to any corporate restructuring involving the transfer of assets or business between group companies.

Consolidation:

Financial Reporting Procedures:

A standardized reporting package should be developed for use by all subsidiaries to report information for consolidation purposes.

"The Finance Companies"
NovAtel Finance Inc., Cellular Finance Inc. and Systems Finance Inc.

Loan Loss Provision:

It is critical that the Company institute a systematic process to review the status of finance loans and the adequacy of the loan loss provisions on a regular basis. We recommend that a loan review panel, including senior management, be established to report on and monitor this area and ensure that proper documentation is maintained on all loans. The advice of experts outside the Company might also be obtained with respect to particular situations.

Currently, there are no standardized procedures or performance indicators developed for the monitoring of system sales loans. This creates the risk that management is not being kept informed of potential problems with loans on a timely basis. Procedures should be implemented to monitor the loans on a regular basis by reference to predetermined standards. In addition, cash flow models should be updated with actual results and reports prepared which highlight variance from performance assumptions for purposes of loan evaluation.

Revenue Recognition Policy:

The Company's revenue recognition policy should be well understood and implemented on the basis of timely information. Decisions on whether revenue on financed equipment sales and loan interest income will be deferred should be reviewed and approved by management.

Loan Commitment Control:

During our examination, we noted several weaknesses in the handling of loan commitments that arose primarily from the quality of supporting documentation and evidence maintained for commitments. As commitments may lead to cash funding requirements, it is critical that this area be well controlled and monitored on a regular basis. We recommend that a commitment status report, which identifies all relevant information, be prepared on a regular basis from communications received from Atlanta.

Term Sheet Process:

It is important that information supporting the term sheet process be well controlled and organized to facilitate the locating of information on a timely basis and prevent the loss of key information. Steps should be taken to standardize the filing system to ensure that information is accessible and up to date for decision making purposes.

Portfolio Ledger System:

There are significant weakness in the Company's portfolio ledger system which centre on the system's inability to integrate the software packages used as well as the lack of appropriate backup data maintained by the Company. Due to the significant risks presented by these weaknesses, we recommend that the company consider an accounting system with an integrated data base which will allow the transfer of data between software programs to be automated. In addition, a back up routine should be established which requires off-site storage of data files.

Carcom Inc.

Sales and Accounts Receivable:

Sales and Marketing Programs:

Documentation of current sales prices and terms and marketing programs is not standardized and leads to confusion among sales, order entry and credit personnel. A consistent form of documentation should be implemented to increase the accuracy and timeliness of accounting for sales transactions.

Sales and Receivables Allowances:

The methodology used by the AGT support group to review the adequacy of the bad debt allowance and bad debt expense should be implemented by the Company.

Sales Returns:

The Company recorded an allowance for sales returns for the first time at year-end, with the assistance of the AGT Support Group, and a new report was designed to track authorizations for returned merchandise ("RMAs"). We recommend that the procedures used by the AGT Support Group be implemented to assist in monitoring this area. As well, the RMAs report should be reviewed and edited on a timely basis and used to help compute the provision for returns.

Warranty Provision:

Most warranty costs are captured as departmental costs and applied against the warranty reserve; however, some material costs are charged directly to cost of goods sold and therefore are never considered in the warranty allowance. In order to monitor warranty costs incurred and the accuracy of the warranty provision, all warranty costs should be appropriately identified and matched against the warranty provision.

Product Defect Information Database:

In the analysis of the warranty allowance at year end, data was not available to identify the data on which a telephone received for repair was originally sold. We understand that the Company is currently maintaining a database which will allow the comparison of units under warranty with repair costs in order to estimate the warranty allowance more accurately. We encourage the continued development of this database and its use in future analyses.

Inventory:

Returned Merchandise:

Procedures for the handling of returned merchandise should be updated to ensure that undue delays in the processing of credits do not occur and that documentation is available for the reconciliation of physical and perpetual inventory quantities. Inventory returned should be processed in a timely manner and inventory returned but not processed at the end of the month should be considered in analyzing the allowance for sales returns.

Ageing of Inventory:

It is critical that the age of various models and component parts be identified in the inventory system to allow for appropriate provisions for reductions in value. We recommend that the Company modify its inventory system to allow for the identification of the age of the inventory.

Long Term Debt:

Review of Debt Covenants:

The loan agreement governing the Company's bank borrowings contains various covenants which, if not met, could result in the bank's declaration of default and acceleration of the maturity of outstanding borrowings. We recommend that management prepare a checklist of all debt covenants and review it monthly for compliance.

General:

Segregation of Accounting Duties:

Current accounting procedures used by the Company lack proper segregation of incompatible functions. An example of this is the payroll clerk who also reconciles the bank statement. As segregation of incompatible functions is a important feature of any good internal control system, we recommend that management review this area to determine whether improvements could be achieved in the division of duties and thereby reduce the risk of any accounting errors or misappropriation of Company assets.

NovAtel Communications Inc.

Accounting Systems:

Adequacy of Current Organization and Accounting Systems:

The current organization and accounting systems do not meet the informational requirements of the company and may not be adequate for the long term needs of the organization. We recommend that management review their information needs to assess whether the current information environment is adequate and consider appropriate changes to meet their long term plans.

Sales and Accounts Receivable:

Accounting for System Sales Agreements:

The accounting for system sales agreements should be revised to reflect profit based on the work performed on the overall projects. Currently, profits are recognized based on the shipments of merchandise and the service performed separately.

Collection and Remittance of Sales Tax:

The Company does not collect and remit sales taxes for sales of equipment to end users. The Company's contracts stipulate that sales taxes are payable by the customer. As there is a risk of exposure to the Company for the unremitted sales taxes, we recommend that all applicable sales taxes be collected and remitted before the contracts are closed-out.

Sales Contracts:

The sales department should obtain a binding, legally-enforceable contract before shipping product to customers to avoid misunderstanding on terms of the sale and possible withholdings of payments by customers on orders waiting for contracts to be finalized.

Inventory:

Repair and Returned Inventory:

Several areas within the repair and returned inventory function require stronger controls, such as the tracking of inventory sent to vendors for repair, the checking of warranties on returned parts prior to authorization of repairs and the billing of customers for replacement parts not returned to the Company. We recommend that the Company review and improve procedures in this area.

Simonsen Communications AS

Inventory:

Inventory Valuation:

Valuation and recognition of obsolete inventory is a risk area for the Company and significant write-downs were made to inventory of spare parts and accessories at year end. Due to declining prices and frequent changes in technology and models, we recommend that the company closely monitor inventory levels and valuations to ensure that this area is reviewed on an ongoing basis.

Year End Inventory Levels:

The inventory level as at year end is considered too high owing to sales being less than budget and delayed deliveries from Astec. We recommend that the company take steps to improve planning and communication with Astec to avoid the problems caused by Astec not fulfilling planned deliveries.

NovAtel Communications (UK) Limited

Computer Issues:

Adequacy of the Present System:

In 1991 and beyond, it is probable that local management will take on the responsibility for accounting for inventory and it is envisaged that the level of operations will increase as foreign sales are invoiced from the UK. The current computer system appears inadequate to cope with the increased demands that will be placed on it as a result of this and we recommend that management review this area in light of anticipated future activity.

Security:

Good controls over computer security are critical to organizations dependent on computer information. We noted that there is a lack of control over access to the computer and its physical security and we recommend that computer security be improved by creating passwords which are securely managed and changed regularly.

Foreign Currency Transactions:

A company policy with respect to the handling of transactions and balances denominated in a foreign currency has yet to be established and agreed with Canada. With increased foreign currency dealings expected in 1991, such a policy must be clearly defined so that inconsistencies do not arise within the group and so that the company does not expose itself to undue currency risks.

Purchases, Payables and Payments:

Purchase Orders:

The purchase order system is not being adhered to by all staff and invoices are received for goods without the relevant purchase order being raised. We recommend that management strictly enforce this system with authority given to the relevant personnel to approve the orders.

Cheque Signatories:

Currently, there are only two cheque signatories which causes difficulties and delays in payments when one of the signatories is away or unavailable. We recommend that a third cheque signatory of appropriate seniority be appointed immediately.

Acknowledgements

PAGE

I acknowledge with gratitude the efforts of senior management and staff of my Office who assisted me in completing the special review and report assigned to me by the Executive Council. Those members of my staff who were directly involved dedicated their time and attention to this project over a period of four months. Other staff of my Office willingly took on extra tasks that were normally the work of the review team.

I am also grateful for the assistance provided by Coopers & Lybrand who provided consulting and analytical services concerning the cellular industry and NovAtel in particular. The firm has been my agent for the financial statement audits of NovAtel for the years ended December 31, 1990 and 1991.

Price Waterhouse provided valuable assistance by making available to me the interview notes and working papers of their special review conducted for TELUS Corporation in October and November 1990. These interviews were conducted at a key time in the NovAtel story, and included the comments of several persons who were not readily available for interview by my staff in 1992.

The following persons were interviewed by my staff, and provided full cooperation:

Bhatia, R.A.
Director, Finance Planning and Analysis, Alberta Treasury

Bickell, R.A.
TELUS Board member
former AGT Commission member

Broadfoot, K.H.G.
Deputy Minister of Technology, Research and Telecommunications
former AGT Commission member

Cherneski, E.G.
TELUS Assistant Vice President, Corporate Audit

Collins, A.F.
Special Advisor to the Provincial Treasurer of Alberta
former TELUS Board member
former AGT Commission member
former Deputy Provincial Treasurer

Getty, The Hon. D.R.
Premier

Grace, W.D., FCA,
former NovAtel Management Committee Chairman

Harries, B.F.
former AGT Commission Secretary

Heath, K.A.
NFI Finance, Inc., President
former NovAtel Vice President, Legal

Hobbs, H.B.
TELUS Board member
former AGT Commission member
former AGT Commission Chairman
former NovAtel Board member

Johnston, The Hon. A.D., FCA
Provincial Treasurer
former member, Ministerial Task Force

Lippert, D.E.
former NovAtel President
former NovAtel Board member

McDonald, J.D.
TELUS Corporation Executive Vice President, Corporate Development
former AGT Vice President, Corporate Planning
former NovAtel Management Committee member
former NovAtel President
former NovAtel Managing Director
former NovAtel Board member

McLaren, T.
former Assistant Deputy Minister, Department of Technology, Research and Telecommunications

McPherson, A.J.
Deputy Provincial Treasurer, Finance and Revenue

Mitchell, P.W., CA
NFI Finance, Inc., Vice President
former NovAtel Vice President and Treasurer

Neldner, H.M.
TELUS Corporation President
TELUS Board member
former AGT President
former AGT Commission member
former NovAtel Board member
former AGT Vice President, Corporate Planning

Orman, The Hon. R.
Minister of Energy
former member, Ministerial Task Force

Parrotta, F.J.
TELUS Corporation Executive Vice President, Finance
former NovAtel Management Committee member
former AGT Vice President, Finance

Pierce, R.L.
NOVA Corporation President
former NovAtel Board member

Rostad, The Hon. K., QC
Attorney General
former member, Ministerial Task Force

Schaefer, H.G., FCA,
TELUS Board member

Skagen, D.G.
TELUS Board member
former NovAtel Management Committee member
former AGT Commission member

Stewart, The Hon. F.
Minister of Technology, Research and Telecommunications
former member, Ministerial Task Force

Tabankin, I.J.
former NovAtel Group Vice President, Subscriber

Varma, B.A.
former NovAtel Vice President and Group Controller
former NovAtel Controller

Webber, P.N.
TELUS Board Chairman
former AGT Commission Chairman
former NovAtel Board member

Underwriters, lawyers, auditors and financial advisors interviewed:

Gibson, B.W., Milner Fenerty
Herman, M.A., Vice President, RBC Dominion Securities Pemberton
Keyes, T.F., S.G. Warburg & Co. Ltd.
Noble, D.T., CA, Partner, Deloitte & Touche
Olsson, P.J., President, RBC Dominion Securities (Alberta) Inc.
Pennock, D.B., CA, Partner, Deloitte & Touche
Stancliff, J., S.G. Warburg & Co. Ltd.
Stankiewicz, J.R.S., CA, Partner, Ernst & Young
Tory, M.A., S.G. Warburg & Co. Ltd.
Watson, A., S.G. Warburg & Co. Ltd.

Prior to finalizing my report, I received comments and advice from the following persons who reviewed the report in draft form:

Acorn, G.W., QC, Barrister & Solicitor
Bessell, D.H., FCA, Partner, Peat Marwick Thorne
Cosh, J.C., FCA, Partner, Peat Marwick Thorne
Fryer, J.T., CA, Partner, Coopers & Lybrand
Lane, R.D., Management Consultant, KPMG Peat Marwick
Ruste, I.M., CA, Partner, Peat Marwick Thorne

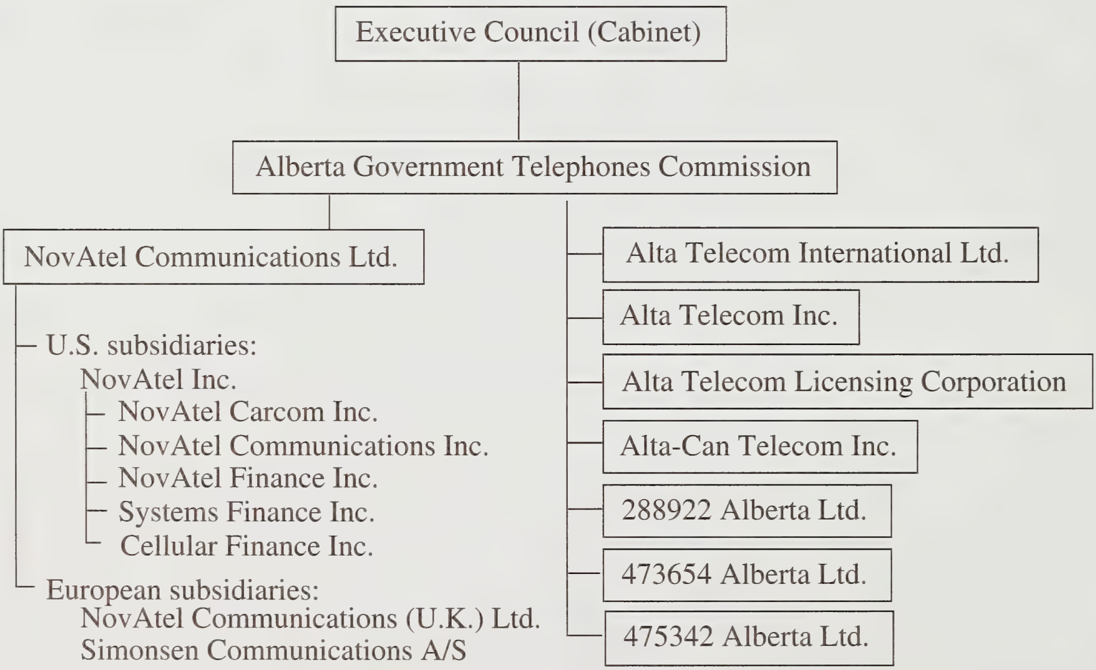
Reference Section

PAGE

This report refers to many entities, persons and reporting relationships. Acronyms are often used for entities. Persons are referred to by their title or position. This reference section will enable the reader to identify the names of the entities and persons, and to understand the basic organizational structure within which NovAtel Communications Ltd. operated.

All references to dollar amounts in this report are in Canadian currency, unless otherwise specified.

Organization Chart - 1990



ENTITIES

TELUS Corporation

TELUS Corporation effectively commenced operations on October 4, 1990, as a management holding company. The largest subsidiary is AGT Limited which provides local and long distance telecommunications service in Alberta and which accounts for over 90% of total revenues. The remaining subsidiaries operate in the cellular and private mobile, directory and other telecommunications related businesses.

AGT Commission

Prior to 1979, the AGT Commission was comprised solely of Provincial government officials and senior AGT management. The Commission was chaired by the Minister of Telephones and Utilities.

In 1983, the AGT Act was amended to allow the Lieutenant Governor in Council to appoint a full time Chairman from the public to the Commission.

In 1986, the Department of Technology, Research and Telecommunications was established. The Minister, through various Acts, was given broad responsibility for the administration of telecommunications legislation.

The AGT Act established the relationship of the AGT Commission to the government. The Lieutenant Governor in Council appointed the Chairman and executive officers of the Commission.

The AGT Commission had complete authority over AGT's internal operations, including the operations of subsidiary companies within the limitations of the financial and personnel resources available.

On February 14, 1986, the Chairman of the AGT Commission wrote a memorandum to the Minister of Technology, Research and Telecommunications summarizing the Commission's understanding of its mandate.

In the memorandum he stated:

> "AGT's mandate is embodied in the AGT Act but may be summarized as follows:
>
> AGT's mandate is to provide and maintain a modern telecommunications network in the Province of Alberta at affordable cost to subscribers; to interconnect our network with other networks that will enhance the services offered to subscribers; to assist in the economic diversification of the Province by participating in investments in telecommunications related industries; to develop new technologies to meet Albertans' expanding telecommunication needs."

Notwithstanding the above, the Act also implied that AGT was expected to operate like a private company, to be self-sustaining and to make a contribution to the general revenues of the Province from its profits.

In 1988, the AGT Act was replaced by the Telecommunications Act.

For decisions likely to affect government policy, it was generally accepted that the Minister would have the right and responsibility to review and approve those decisions.

The Chairman of the AGT Commission was responsible for the communication of Commission matters to the Minister and for communicating broad government direction to the Commission and to the President of AGT.

All decisions relating to NovAtel Communications Ltd., other than those affecting the privatization of AGT, were considered by both the government and the Chairman of the AGT Commission to be internal operating decisions.

North West Trust

North West Trust Company is incorporated under the Trust Companies Act of the Province of Alberta, and has its headquarters in Edmonton. The primary shareholder is the Province of Alberta.

North West Trust offers a full range of personal and commercial financial services. Branches are located in Alberta, British Columbia, Saskatchewan and Manitoba.

Bosch

Robert Bosch GmbH is a privately-controlled German corporation. Bosch operations fall into four product groups including automotive equipment, communications technology, consumer goods and capital goods. In 1988, Bosch had 168,000 employees, over $16 billion in sales and over $12 billion in assets.

Bosch is the world's largest manufacturer of auto components, typically with significant electronic content. Bosch's telecommunications operations include the manufacture of car radio systems, traffic information and guidance systems, radio electronics, the supply of telecommunications systems in Germany, and the supply of telecommunications transmission equipment such as satellites, location and navigation systems.

Bosch has a reputation for technical excellence, innovation and product quality.

RBC Dominion Securities

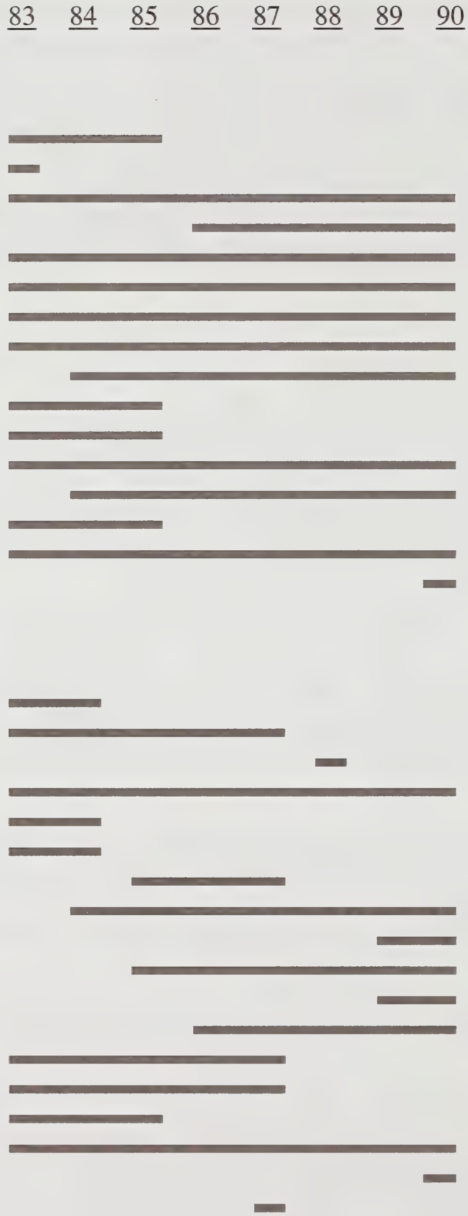
RBC Dominion Securities Inc., is an investment dealer which has operations throughout Canada, United States, Europe and the far east. Its principal business includes a broad range of investment advice, bond sales and trading, funds management, short-term money market securities sales and trading, financial and merger acquisition advisory services, as well as underwriting of corporate and government securities in Canada and elsewhere. Services are provided to a large and diversified group of clients and customers including domestic and multi-national corporations, governments, emerging-growth companies, financial institutions and individual investors.

Pudwill, Horst

Mr. Horst Pudwill is a businessman with international interests in the United States, Switzerland, Hong Kong and China. Mr. Pudwill is the President of Telexel Holding Limited, a newly formed private Alberta-based Company. Telexel is 51% owned by an Alberta numbered company and 49% by Digicom Cellular International Co. Ltd.

Mr. Pudwill's business interests include rechargeable power tools, health care and other domestic appliances, as well as electrical components and manufacturing and distribution. Mr. Pudwill is also the Chairman and a major shareholder of TechTronic Industries Co. Ltd., a publicly traded overseas Company. The annual revenue of Mr. Pudwill's consolidated international interests exceeds $300 million.

BOARD MEMBERS



AGT Commission:

Ballie, D.
Barnes, J.A.
Bickell, R.A.
Broadfoot, K.H.G.
Burrows, J.W.
Collins, A.F.
Graham, W.
Hobbs, H.B.
Leitch, C.M.
MacNichol, V.
McDonald, J.R.
Neldner, H.M.
Skagen, D.G.
Szaszkiewicz, J.
Weatherup, F.S.
Webber, P.N.

NovAtel Communications Ltd.:

Barnes, J.A.
Blair, S.R.
Butler, J.H.
Burrows, J.W.
Green, J.L.
Hartwick, B.G.
Healy, J.J.
Hobbs, H.B.
Leitch, C.M.
Lippert, D.E.
McDonald, J.D.
Neldner, H.M.
Pierce, R.L.
Rankin, W.C.
Szaszkiewicz, J.
Weatherup, F.S.
Webber, P.N.
Wilson, W.G.

PRINCIPAL OFFICIALS

NovAtel Communications Ltd.:

Chairman:	
Rankin, W.C.	January 1983 to December 1986
Burrows, J.W.	December 1986 to November 29, 1990
President:	
Green, J.L.	March 1983 to November 1984
Lippert, D.E.	May 1985 to June 1990
Moore, S.W.R.	June 1990 to November 29, 1990
McDonald, J.D.	April 1991 to May 29, 1992
Vice President and Group Controller:	
Varma, B.A.	September 1990 to November 29, 1990
Controller:	
Varma, B.A.	September 1988 to September 1990
Chief Financial Officer:	
Sinclair, D.	effective March 1991
Chief Operating Officer:	
Eberly, H.	effective March 1991
Managing Director:	
McDonald, J.D.	October 1990 to April 1991
Group Vice President, Subscriber:	
Tabankin, I.J.	August 1987 to January 1991

Alberta Government Telephones:

Chairman:	
Hobbs, H.B.	August 1983 to November 1989
Webber, P.N.	November 1989 to October 1990
President:	
Barnes, J.A.	June 1980 to July 1984
Neldner, H.M.	July 1984 to October 1990
Vice President, Corporate Planning:	
Neldner, H.M.	June 1983 to July 1984
McDonald, J.D.	December 1985 to October 1990

Vice President, Finance:

Baillie, D.F.	June 1983 to June 1984
Parrotta, F.J.	December 1985 to October 1990

Vice President, Marketing:

Szaszkiewicz, J.	May 1979 to July 1984

Vice President, Operations:

McDonald, J.R.	June 1983 to December 1985

TELUS Corporation:

Board members:

Bickell, R.A.	effective July 20, 1990
Collins, A.F.	effective July 20, 1990 to July 29, 1992
Graham, W.A.	effective July 20, 1990 to May 29, 1992
Hobbs, H.B.	effective July 20, 1990
Major, J.C.	effective July 20, 1990 to August 2, 1991
McLaws, J.L.	effective July 20, 1990
Neldner, H.M.	effective July 20, 1990
Ondrack, E.S.	effective July 20, 1990
Schaefer, H.G.	effective July 20, 1990
Skagen, D.G.	effective July 20, 1990
Webber, P.N.	effective July 20, 1990
Hotchkiss, H.N.	effective January 11, 1991
Kimball, N.	effective January 11, 1991
Milavsky, H.P.	effective January 11, 1991
Ferchat, R.A.	effective May 29, 1991
LeLacheur, R.J.	effective June 19, 1991
O'Donoghue, W.B.	effective September 13, 1991

Chairman:

Webber, P.N.	effective July 25, 1990

President:

Neldner, H.M.	effective July 25, 1990

Executive Vice President, Corporate Development:

McDonald, J.D.	effective July 25, 1990

Executive Vice President, Finance:

Parrotta, F.J.	effective July 25, 1990

Minister of Technology, Research and Telecommunications:

Young, The Hon. L.	May 27, 1986 to April 13, 1989
Stewart, The Hon. F.	effective April 14, 1989

Deputy Minister of Technology, Research and Telecommunications:

Broadfoot, K.H.G.	effective February 15, 1986

Deputy Minister of Utilities and Telephones (1983):
MacNichol, V.

Deputy Provincial Treasurer (1983):
Collins, A.F.

Management Committee (January 1991 to May 1992):

Chairman:
Grace, W.D.
Members:
Erker, D.
Ferchat, Bob
McDonald, J.D.
Morgan, G.
Parrotta, F.J.
Seaman, B.J.
Skagen, D.G.

Ministerial Task Force (December 1990 to May 29, 1992):

Johnston, The Hon. A.D.	Provincial Treasurer
Orman, The Hon. R.	Minister of Energy
Rostad, The Hon. K.	Attorney General
Stewart, The Hon. F.	Minister of Technology, Research and Telecommunications

REPORTS AND STUDIES

Arthur D. Little, Inc.

The AGT Commission retained Arthur D. Little, Inc. in the fall of 1988, to:
- evaluate NovAtel's position in the North American marketplace and elsewhere,
- review NovAtel's business plans, assess NovAtel's immediate and medium term financial prospects,
- evaluate the business risks associated with established action plans,
- assess NovAtel's market value based on its current operations and a pro forma five year projection of its operations, and
- to identify potential buyers for NovAtel and its value to such investors.

A report was presented to the AGT Commission in November 1988 which provided an overview of the industry, a review of NovAtel's strengths and weaknesses, an evaluation of NovAtel, and an overview of possible strategic partners.

Burns Fry Ltd.

NOVA Corporation retained Burns Fry Ltd. in March 1988 to provide an assessment of the cellular radio industry and to provide an evaluation of NovAtel Communications Ltd. The report was provided to AGT Commission members and included:
- a third-party evaluation on the potential markets for cellular communications including both subscriber and systems equipment,
- an evaluation of NovAtel's ability to recognize market opportunities,
- a valuation of NovAtel,
- an analysis of potential business risks, and
- identification of potential buyers.

Coopers & Lybrand

<u>Total Quality Control Audit</u>

NovAtel retained The Coopers & Lybrand Consulting Group to conduct a total quality control audit in the spring of 1989. A report was provided to the Quality Sub-Committee of the NovAtel Board of Directors on July 10, 1989. The report defined five states of quality maturity, and provided an assessment of NovAtel's present state of quality maturity. Significant areas for improvement which would have a direct impact on NovAtel's overall financial performance were identified and recommendations provided.

<u>Management Assessment of NovAtel</u>

NovAtel retained The Coopers & Lybrand Consulting Group in January 1991 to complete a management assessment. The report included an in-depth assessment of an identified list of ten vice presidents and general managers, preliminary impressions of 20 managers and directors, and a summary of key issues identified by the employees interviewed which had a significant impact on the effective management and operation of the company. In addition, the report provided a synopsis

of the requirements for improved teamwork and performance, formal and informal operating structures, and strengthened morale.

Price Waterhouse

On October 2, 1990, the TELUS Board of Directors established a Special Committee to examine the events which led up to the amendment in the TELUS prospectus. Price Waterhouse was retained to assist the Special Committee in conducting the review and in the preparation of a report. The specific terms of reference included a review of the events leading up to the amendment in the prospectus, a review of the Board and senior management structure of NovAtel, and an examination of the budget and forecasting methods used by NovAtel. The report was dated November 28, 1990.

S.G. Warburg & Co. Ltd.

1989

S.G. Warburg was retained by the AGT Commission in September 1989 to prepare a detailed analysis of the potential value of an interest in NovAtel to a strategic partner, and based on such analysis to evaluate the options available to AGT, assess the strength of its negotiating position and formulate a strategy for negotiations with Bosch. Further, advice and assistance during ensuing negotiations with Bosch would be provided.

A report was presented to AGT Commission members in December 1989 which presented an analysis of NovAtel operations, and a valuation and assessment of strategic alternatives available to the AGT Commission.

1990

In March 1990, the President of AGT requested S.G. Warburg to review the key issues facing AGT in determining the future of its investment in NovAtel. On March 28, 1990, S.G. Warburg provided a letter to the President of AGT, which was subsequently provided to all Commission members. The letter discussed NovAtel's need for a strategic partner, AGT's objectives and why Bosch was seen as the most suitable candidate, reviewed Bosch's proposal and discussed the consequences of AGT failing to reach an agreement.

1991

S.G. Warburg was retained by the Management Committee in March 1991 to advise on the most appropriate courses of action with respect to NovAtel. Included in their presentation to the Management Committee in May 1991 were their impressions of the key areas of NovAtel's business which were likely to be of value to potential purchasers, actions which they believed the Management Committee should consider taking in order to maximize the chances of divesting of the Company. In addition, the report presented a number of matters which S.G. Warburg believed needed to be addressed before NovAtel could be effectively and credibly marketed for sale.

SRI International

NovAtel retained SRI International in early March 1991 to conduct two studies. The first study focused on the positioning of the Company's technology and manufacturing assets. The intent of the study was to furnish prospective buyers with an objective benchmark of NovAtel's technical assets. It was not intended to determine whether the Company could remain viable on its own. The second study was to provide NovAtel's management and parent organization with an independent assessment of NovAtel's marketability and competitive positioning in both the systems and subscriber businesses.

The first study was presented to NovAtel's Management Committee on April 29, 1991, and to the shareholder's representatives on May 10, 1991. The second study was presented to NovAtel's internal operating management on June 13, 1991, to NovAtel's Management Committee on June 19, 1991, and to the shareholder's representatives on June 28, 1991.

ABBREVIATIONS

AGT	Alberta Government Telephones
AMPS	Advanced Mobile Phone Service
AURORA	Automatic Roaming Radio
Bosch	Robert Bosch GmbH
CAR	Capital Appropriation Request
CCCC	Consolidated Cellular Communications Corporation
CIBC	Canadian Imperial Bank of Commerce
CICA	Canadian Institute of Chartered Accountants
CIS	Cellular Information Systems Inc.
FAIP	Fixed Asset in Progress Account
FCC	U.S. Federal Communications Commission
GCC	General Cellular Corporation
GCI	General Cellular International
GMD	GMD Partnership
JRC	Japan Radio Corporation
MSA	Metropolitan Statistical Area
NMT	Nordic Mobile Telephone
NOVA	Nova Corporation of Alberta
NovAtel	NovAtel Communications Ltd.
NWTC	North West Trust Company
OEM	Original Equipment Manufacturer
PCI	Petroleum Communications Inc.
RMAs	Returned Merchandise Authorizations
RSA	Rural Service Area
S & P	S & P Cellular Holdings Inc.
Telexel	Telexel Holding Limited
TELUS	TELUS Corporation
U.S.	United States